The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 767.---Vol. XX.] LONDON, SATURDAY, MAY 4, 1850. [Price 6d.

SPARE MATERIALS FOR SALE, by PUBLIC AUCTION, on Wednesday, the 9th day of May next, by Eleven o'clock in the forenoon, at GUSTAVUS MINES, in the parish of CAMBORNE, CORNWALL.

One 20-inch cylinder STEAM-WHIM, cage and boiler, complete; one 9-inch 9-feet plunger pole; one 9-inch 10-feet plunger pole; one 8-inch 9-feet plunger pole, with stuffing boxes and glands to match; two 10-inch H and top-door pieces; one 9-inch H and top-door piece; forty-seven 9-inch 9-feet pumps; two 8-inch 9 feet pumps; twenty 7-inch 9-feet pumps; forty-seven 6-inch 9-feet pumps; one 5-inch 9-feet working barrel; one 5-inch 9-feet sinking windbore; one 5-inch door-piece; 218 feet 9 inch square rods; 122 feet 8-inch square rods; 474 feet 7-inch square rods; 70 feet 6-inch square rods; 20 pair faggoted and common iron strapping-plates, staples, and glands; one steam-whim boiler; one underground balance bob; 180 fathoms tram-road iron; six 4-feet shelves; eight 2-feet shelves; ten tons of old cast-iron; two tram waggons; a large quantity of steam whim chain; dressing-house, 60 feet long by 15 feet wide; one 42-inch, one 40-inch, two 36-inch, and one 30-inch smiths' bellows; miners' tools; flange and rod bolts, pump rods, ten tons of old wrought-iron, a large quantity of brass scatings, and other description of brasses.

Further particulars may be had of Capt. Thomas Richards, Gustavus Mines, Camborne.
April 23, 1850.

MR. WILLIAM PEARSON will SELL, BY AUCTION, on Friday, May the 10th, 1850, punctually at Eleven in the forenoon, close to the Boat Yard of Mr. Thomas Ormandy, WIGAN, in the county of Lancaster (in consequence of the proprietors having no further use for them),

TWO RIBBLE TRADERS AND SEVERAL CANAL BOATS,

Including one excellent HATCHED RIBBLE TRADER, together with the sails, rigging, anchors, chain cable, &c.: she is suitable for the Canal and Mersey Trade.
Also, ONE HATCHED BOAT, almost new, with anchors, sails, chain cable, rigging, &c.
TWO long BROAD CANAL BOATS—one of which has lately been rebuilt
ONE long NARROW CANAL BOAT, in excellent condition; and several others, suitable for the Coal Trade, which will be produced at the time of sale.
The boats will be removed to the Boat Yard early on the morning of sale, and may be inspected from Six o'clock until the sale commences.

LANDS, HOUSES, &c., IN AND NEAR IRVINE, FOR SALE, AND UPSET PRICES REDUCED.

TO BE SOLD, BY PUBLIC ROUP, within the King's Arms Inn, IRVINE, on Monday, the 20th day of May next, at One o'clock in the afternoon, the following UNSOLD LOTS of the TRUST ESTATE of the late Colonel S. M. Fullarton:—

1. The FARM of BARTONHOLM and SNODGRASS, with KIDSNEUK FIELD, possessed by Mr. George Meikle; also the portion of LAND of LONGFORD MORRIS, with Stable and Garden, lying north of the River Garnock, possessed by Mr. Wm. M'Jannet; and the LANDS of CORSEFORD, possessed by Mr. Alexander Meikle—all lying in the parishes of IRVINE and KILWINNING.

The lands extend in whole to 235 imperial acres, plan measure, or thereby; and there are besides about 12 acres of MINERALS in the lands occupied by the railway, and in a wing of the property adjoining on the north, which accompany this lot. The well-known SEAMS of COAL which run through the whole lands, may, to a great extent, be wrought out without danger of inundation from the Parrot Seam, which was lately flooded by the Garnock, according to the opinion of mining engineers. Great facilities are afforded by the River Garnock and the Glasgow and Ayrshire Railway, running through the lands, for disposing of the coal, both for exportation and home consumption. Free land rental, £224, besides £26 for cot-houses. Upset price of this lot reduced to £10,500.

2. The Three Storey Slated DWELLING-HOUSE, on the west side of the High-street of Irvine, with Offices and Garden behind the same, some time possessed by Colonel Fullarton, now by Mrs. Urquhart. The house has been lately enlarged and improved.

3. The BACK RIG, lying nearly opposite the Manse of Irvine, eastward from the road to the Golfields, presently possessed by Robert Smith, containing 3 roods 10¼ falls, imperial plan measure, or thereby.

4. The SEAT, or PEW, in the galleries of the parish church of Irvine, being the backmost but one of the Bartonholm Loft.

Further particulars may be obtained on application to Messrs. Patrick M'Ewen and Carment, W.S., No. 32, Albany-street, Edinburgh; Messrs. Montgomerie and M'Jannet, bankers, Irvine; or to Rankin and Smith, writers, there.

The articles and conditions of roup, with the title deeds, may be seen in the hands o Rankin and Smith.—Irvine, April 24, 1850.

MONMOUTHSHIRE.—SALE OF A VALUABLE IRON FOUNDRY AND PREMISES.

MR. H. M. PARTRIDGE is instructed to SELL, by PUBLIC AUCTION, at the King's Head Inn, Newport, on Wednesday, the 22d day of May next, at One for Two o'clock precisely, all that valuable PROPERTY known as the

MAES-Y-CWMWN IRON FOUNDRY,

Situate in the parish of MOUY-THUS-LWYN, together with TWO good DWELLING-HOUSES and ENTRANCE LODGE.

The FOUNDRY is REPLETE with EVERY CONVENIENCE, and comprises stove, engine-house, a single power STEAM-ENGINE, with gearing, &c., to work a blowing-fan, boiler, grate, bars, steam and water-pipes, cupola furnace, with connecting air-pipes, from the fan.

A branch tramroad connects the foundry with the line of tramroad to Newport, Rhymney, Tredegar, &c., from whence iron, coal, and coke may be obtained; there is a fine spring of water on the premises, and a small rivulet running through them.

This property, which comprises two acres, is held under a lease for 90 years, from the 24th June, 1840, subject to an annual ground-rent of £11, and offers a most desirable investment to any person conversant with the business, which may, at a trifling expense, be very considerably extended, and adapted to fitting-up and other purposes.

For further particulars apply to Mr. Edmund Beckingham, West of England Bank; or to Mr. H. M. Partridge, auctioneer, house and estate agent, Newport, Monmouthshire.
St. Woollos House, Stow Hill, April 25, 1850.

TO BE SOLD, pursuant to an Order made in the matter of Joint-Stock Companies' Winding-up Acts, 1848 and 1849, and of the Banwen Iron Company, with the approbation of Richard Torin Kinderaley, Esq., the Master of the High Court of Chancery, charged with the Winding-up of the Company some time in the month of May next, of which due notice will be given, at SWANSEA, in the county of GLAMORGAN, the MESSUAGES, FARMS, LANDS, TENEMENTS, and HEREDITAMENTS, called or known by the name of PANTYDDRAINEN, or BANWEN, FARM, TEYRBACH FARM, TONBURDDIN, otherwise TONPURDDIN, FARM, YURSYNENEN FARM, and YNESDOULID, otherwise YNYSTOMLYN, FARM, containing 573 acres, or thereabouts, with the MINES and SEAMS of COAL, CULM, and IRONSTONE, and IRON MINE MINERALS, FIRE-CLAY, QUARRIES, ROCKS, and STONES, in, upon, or under the said farms and premises hitherto used by the BANWEN IRON COMPANY, and also the WORKS and PLANT of and belonging to the said company.

The ESTATE is situate in the parish of CADOXTON juxta NEATH, in the county of GLAMORGAN, 13 miles from the town of Neath, and 16½ from the port of Swansea. The Swansea Canal is within 4 miles of the property, and is worked by a public tramway. The South Wales and Vale of Neath Railways are within a short distance of the estate.

The MINE is very rich in IRON ORE, and the LAND abounds with the finest ANTHRACITE COAL, which is found at the mouth of the pit.

The WORKS are capable of working and turning out weekly 90 tons of pig-iron.

Particulars and conditions of sale are in course of preparation, and may shortly be obtained (gratis) at the said Master's office, Southampton-buildings, Chancery-lane, London; of Messrs. Bristow and Tarrant, solicitors, 2, Bond-court, Walbrook, in the city of London, and Greenwich, in the county of Kent; of Mr. Adron, of No. 10, Coleman-street, in the city of London, the official manager of the said company; and at the Lamb and Flag Inn, Vale of Neath; and at the principal inns in the towns of Swansea and Neath.

The estate and works may be viewed any day between the hours of Ten in the morning and Five in the afternoon.—Dated April 25, 1850.

BRISTOW & TARRANT,
No. 2, Bond-court, Walbrook, and Greenwich,
Solicitors for the Official Manager.

TO CONTRACTORS, BUILDERS, AND OTHERS.

TO BE SOLD, BY PRIVATE CONTRACT, the ENGINES, MACHINERY, &c., which have been used in the erection of the Britannia-bridge, consisting of ONE 40-horse HIGH-PRESSURE ENGINE, with 18-inch cylinder, and 3-feet 6-inch stroke, with boiler complete, drum and hoisting gear; ONE 25-horse HIGH-PRESSURE-ENGINE, with 14-inch cylinder, and 2-ft. stroke, with portable boiler complete, drum and hoisting gear; travelling cranes, landing cranes, setting machines, single and double purchase crabs, blocks, chain and tackle of every description, and of first-rate quality.—Application to be made to Messrs. B. J. Nowell and Co., at the works, Britannia-bridge, Bangor, North Wales.

TO BE SOLD, a POWERFUL CONDENSING PUMPING ENGINE (equal to 50-horse power), with cast iron cylinder, 2 feet 6 inches diameter, 8 feet 2 inches deep, in cast-iron case and plates, with bright NEEDLE-IRON piston-rod, sling-fitted, with keys, steam-valves, brass fittings, in cast-iron case, striking-rods, lever and balance weights, timber plug-rod, with guide-rods, in wood frame, injection cock, with rod and spanner, oak beam, 15 feet long, cast-iron martingales, wrought-iron braces, bolts and nuts, main gudgeon, wrought-iron straps and ties, two cast-iron carriages, with brass bearings.

CAST-IRON PUMP, with cylinder, 2 feet 8 inches diameter, 24 feet deep, with clacks.

AIR-PUMP, 16 inches diameter, 6 feet deep, pump-rod and bucket, 2 strong wrought-iron chains, 3-inch fir cistern, with iron braces, bolts and nuts, 5 feet 3 inches by 6 feet, 2 feet 9 inches deep, flood-gate, lever and rod, 2 timber bearers, 22 feet long each, fitted with braces, bolts and nuts, condense-box cover and pipe, large wood cistern, fitted with bolts and nuts, wrough-iron straps and apparatus.

The fact that this ENGINE was the FIRST MADE by JAMES WATT, will be considered interesting by all scientific men, and will attach a value to it as a monument of the maker's great genius and mechanical skill. It has been worked until within a few years since, and can now be put into working order at a small expense.

For particulars apply to Samuel Walker, Jun., Rolled Metal, Wire, and Tube Warehouse, Colmore-row, Birmingham.

MR. JAMES CROFTS, of No. 4, KING-STREET, CHEAPSIDE, takes the liberty of soliciting the attention of CAPITALISTS (and more particularly so in consequence of the depressed and, in his opinion, still unsafe condition of railway property) to the MINING INTERESTS of GREAT BRITAIN, as offering, at this time, the SAFEST MEDIUM OF INVESTMENT of any adventures of an acknowledged speculative character, and TENDERS his SERVICES generally for the PURCHASE or SALE of MINING SHARES.

Mr. CROFTS has at present FOR SALE SHARES in the following Adventures:—

ASHBURTON UNITED (Tin), in 1024 shares, and a new issue of 1024 shares, on which 2*l.* per share is to be paid out of a maximum new capital of 4*l.* per share.
ESGAIR LLEE (Lead), in 1280 shares—South Wales.
WHEAL BRAY (Copper), in 1024 shares.
BODCAL, or SOUTH WALES (Lead and Copper), in 2000 shares.
WHEAL LANGFORD (rich Silver, Gossan, and Lead), in 6000 shares.
BODMIN CONSOLS (Silver-Lead), in 1024 shares.
LLWYNMALES (Silver-Lead), in 1000 shares—Cardiganshire.
GRAMBLER AND ST. AUBYN, in 256 shares.
METROPOLITAN STONE COMPANY, in 100 shares.
WHEAL EMILY (Silver-Lead), in 1024 shares—Devon.
HAFOD LLWYN (Silver-Lead), in 1000 shares—North Wales.
WEST TOLGUS (Copper), in 940 shares.

In addition to the above, Mr. CROFTS has also generally FOR SALE SHARES in the MINES managed in his OFFICE, where the Cost-books, Lists of Shareholders, and periodical Balance sheets and Reports may be inspected—viz.:

LAMHEROOE WHEAL MARIA (Copper) in	2048 shares.
WHEAL BENNY (Copper)	256 ,,
LOSTWITHIEL CONSOLS (Copper)	253 ,,
COMBLAWN (Silver-Lead)	500 ,,
WHEAL VINCENT (Tin)	1000 ,,
WHEAL SARAH (Silver, Gossan, and Lead)	1056 ,,

LEAD MINES TO BE LET—the LEAD MINES of FEE DONALD, situated in the MINING DISTRICT of STRONTIAN, ARGYLLSHIRE.—The ORE is a good SULPHURET, yielding, by correct analysis, 87 per cent. of lead. There are several veins which have been partially worked, and hold out encouraging prospects of success; they are favourably situated for free levels, and a stream (important for washing the ore, &c.) flows across them. An easy road, a few miles in length, will convey the produce to Loch Sunarb, an arm of the sea (western ocean), whence it may be transported to any part of the United Kingdom.

The district has been surveyed by Mr. Rise, lecturer on mineralogy: and for further particulars application may be made to Messrs. Inglis and Burns, W.S., 16, Queen-street; or Mr. Alex. Rise, mineralogist, 2, Drummond-street, Edinburgh; and Mr. John Watson, factor, Strontian, Argyllshire.—Edinburgh, April 18, 1850.

VALUABLE SILVER-LEAD MINES.—TO BE LET, for a term of years, MINING GROUND, at LLANFAIR CLYDOGE, in the county of CARDIGAN, 4 miles from Lampeter, immediately adjoining the site of the mine now working by Dr. Quin, the ore of which has, for some time past, produced, from the high assay of silver, 26 to 27 lbs. per ton.

For particulars apply to Messrs. Freshfields, solicitors, London; or to John Neale, Esq., Castle-hill, High Wycombe.

EAST OF SCOTLAND MALLEABLE IRON COMPANY.—The Directors have been authorised to RECEIVE OFFERS for the PURCHASE, or LEASE, of the MALLEABLE IRON WORKS at DUNFERMLINE—comprising a STEAM-ENGINE, of 80-horse power, working the machinery, consisting of FORGE and 2 PUDDLE BAR TRAINS, of 16 inches diameter, HAMMER and PATENT SHINGLING MACHINE; also a 16-inch MERCHANT BAR or RAIL MILL, a 12-inch MILL, for ordinary sizes merchant bars, and an 8-inch GUIDE MILL, 13 PUDDLING FURNACES, and 6 MILL FURNACES—the whole capable of producing 120 tons of bar-iron weekly.

A REFINERY STEAM-ENGINE, [illegible]-horse power, with blowing apparatus, complete, and two fires erected.

A complete SET of WORKSHOPS, containing a 20-horse power STEAM-ENGINE, driving a powerful roll-turning lathe, and blowing apparatus for smiths' fires.

A PUMPING and CLAY MILL STEAM-ENGINE, of 16-horse power, used for the manufacture of fire-brick, and pumping water for supply of engines.

Also, in course of erection, a STEAM-ENGINE, of 80-horse power, intended to drive the mills apart from the forges, having strong cast-iron framing laid down, and machinery suitable on the premises, which could be brought into active operation in a short period.

Together with the necessary TOOLS, LOOSE MACHINERY and STOCKS, of different kinds.

Offers will also be received for the PURCHASE of the ESTATE of TRANSY, consisting of about 107 imperial acres, with elegant MANSION-HOUSE and PLEASURE GROUNDS, situated about half a mile to the east of the town of Dunfermline.

Applications may be made to Mr. Talbot, manager of the works; or to Johnstone, Russell, and Craig, writers, Dunfermline.
Dunfermline, March 15, 1850.

EAST OF SCOTLAND MALLEABLE IRON COMPANY.—Notice is hereby given, that a SPECIAL GENERAL MEETING of the shareholders of the EAST OF SCOTLAND MALLEABLE IRON COMPANY will be HELD within the Town House of Dunfermline upon Thursday, the 22d day of August next, 1850, at Twelve o'clock noon, for the purpose of considering a proposal to DISSOLVE the said COMPANY, and to SELL and realise the whole PROPERTY and ESTATE, and FUNDS and EFFECTS of the Company, and finally to wind-up the Company's affairs—all in terms of the 37th clause of the Contract of Copartnery of the said Company.

By order of the Directors,
JAMES INGLIS, Chairman.
Dunfermline, Feb. 6, 1850. JOHN DRYSDALE, Interim Secretary.

ROCHE ROCK TIN MINING COMPANY.
Capital £5000, in 5000 shares, of £1 each.
No further call will be required, and no liabilities can be incurred.
NOW AT WORK ON THE COST-BOOK SYSTEM.
BANKERS—The London and County Joint-Stock Bank.
MANAGER ON THE MINE—Captain Pinch.
SECRETARY—John Marriner, Esq.
OFFICES—1, ROYAL EXCHANGE BUILDINGS, LONDON.

This valuable MINE is situate in the parish of ROCHE, near St. Austell, CORNWALL, and is held under a lease of 21 years, at a royalty of 1-20th. It is bounded on the south-west by Old Beam Mine, and on the south-east by the Great Rocks Tin Mines—two of the largest and richest mines ever worked in this district; the attested profits from which exceed £250,000—both of which are now at work. The sett is in the junction of the killas and granite, which greatly enhances its value.

"The lode in the 10 fm. level is much improved, and I am perfectly convinced, on the engine going to work, our returns will increase more than ten times what they are at present. There was sampled on the 6th ult. a small parcel of tin, worth about £85, and the agent I took with me is delighted with the prospects."—*Extract of a Letter from a Shareholder.*

Applications for the remaining shares to be made to the secretary of the company, No. 1, Royal Exchange Buildings.

TREBELLANS AND TRESBYSKIN SILVER-LEAD MINES, situate in the parish of CUBERT, in the county of CORNWALL, a short distance west of East Wheal Rose.

BANKERS—Messrs. Martin, Ston, and Martin, Lombard-street.
SECRETARY—M. R. Thomas.
OFFICES—8, GEORGE-YARD, LOMBARD-STREET.

These mines were lately worked and well known as the Cubert Silver-Lead Mines, from which about £7000 worth of ores were raised within two years. A larger engine being required, and by which means two productive lodes will be operated on at the same time, with little additional expense, the present proprietors have decided on disposing of a limited number of shares in this unusually promising undertaking, for that purpose. Seldom does such a favourable opportunity offer for temporary or permanent investment.

Mr. R. Thomas will, on application, afford every information that may be required.

BICKFORD'S PATENT SAFETY FUSE.—The Patentees of the ORIGINAL, and only real SAFETY FUSE, beg to inform Merchants, Mine Agents, Railway Contractors, and all persons concerned in Blasting Operations, that, for the purpose of protecting the public in the use of a genuine article, the PATENT SAFETY FUSE *has now a thread wrought into its centre*, which being patent right, infallibly *distinguishes it from all imitations*, and ensures the continuity of the gunpowder The Safety Fuse is now protected by a Second Patent, and manufactured by greatly improved machinery.

BICKFORD, SMITH, & DAVEY, Camborne, Cornwall.

In the press, and shortly to be published,

MINING ADVENTURE: with a DIGEST of the COST-BOOK SYSTEM, STANNARIES, and GENERAL MINING LAWS.
By THOMAS BARTLETT.

*** Subscribers names received at the office of the *Mining Journal*, 26, Fleet-street.

THE MINING ALMANACK for 1850: compiled and arranged by HENRY ENGLISH, Mining Engineer, &c. Under the especial sanction and patronage of H.R.H. PRINCE ALBERT, Lord Warden of the Stannaries, Chief Steward of the Duchy of Cornwall, Devon, &c.—THE SECOND VOLUME will appear early in MAY NEXT, with ADDITIONAL TABLES and STATISTICS, connected with the Mining Interests.—Names of subscribers are requested to be addressed to Mr. H. English, 25, Fleet-street.

PARTNERSHIP—MINING ENGINEERS AND SURVEYORS.—The ADVERTISER, who is well connected, and who has served his time with a Mining Engineer and Surveyor, and has since had much experience in the Management of Collieries, is desirous of connecting himself in PARTNERSHIP with a GENTLEMAN engaged in SIMILAR PURSUITS, and by whom a steady partner, of active business-habits, would be appreciated. Would not object to treat with a General Land Agent and Surveyor; or to accept a SITUATION with either of the above, provided a partnership could not be arranged.—Letters to be addressed to "A. B.," Post-office, Bath.

WANTED, in a MANUFACTURING BUSINESS and IRON TRADE, A PARTNER, who can command from £6000 to £8000, and who may be actively engaged or otherwise. The business is well established, and in full operation, yielding good profits, and capable of considerable improvements.—Communications, addressed to "A. B.," 25, Basinghall-street, London, will have prompt attention
N.B.—None but principals will be treated with.

WANTED,—A SECOND-HAND 36-inch cylinder STEAM-ENGINE, with boiler and appliances complete.—All particulars of price, &c. to be sent to Capt. James Gripe, St. Agnes, near Truro, Cornwall.

WANTED,—DOUBLE-ANGLED WROUGHT-IRON TRAMPLATES.—Offers to supply the same to be sent to Mr. William Clark, Holmes Colliery, Rotherham.

FOR SALE,—A SECOND-HAND 60-horse HIGH-PRESSURE PUMPING-ENGINE, 30-inch cylinder, 7-feet stroke, with two cylindrical boilers, in excellent condition.

WANTED,—TWO or MORE SECOND-HAND BLOWING CYLINDERS, about 18-inch diameter, and 2-feet 6-inch stroke.—Address "H. C. J.," at the office of the *Mining Journal*, 26, Fleet-street, London.

STEAM-ENGINE WANTED.—A SECOND HAND 70-in. diameter STEAM-ENGINE, or thereabouts, WANTED; 10-feet stroke in the house, and 10-feet in the pit.—All particulars of the same, addressed to Edward Jones, Esq., Pendre, Holywell, Flintshire, enumerating appendages, length of time at work, size of boilers, when and where constructed, and lowest price delivered at Holway Lead Mine, near Holywell.

SULPHUR.—TO BE SOLD, a valuable PATENT for the SEPARATION of SULPHUR from IRON, COPPER, and OTHER ORES.—Apply to Mr. Phillips, No. 6, Queen-street-place, Upper Thames-street, London.

TO PARLIAMENTARY SOLICITORS, AGENTS, &c.—The ADVERTISER, having just completed an engagement with one of the most extensive Parliamentary firms in London, is desirous of undertaking the "REFERENCE" of LINES of RAILWAY, either at a low figure per mile, or to SUPERINTEND and ASSIST in taking REFERENCE TRAFFIC, &c., at a moderate salary. The great experience the Advertiser has had enables him to guarantee accuracy. Unexceptionable references can be given. Plans prepared for committees, &c., at a very reduced price.—Address "J. B. P.," *Railway Times* Office, 122, Fleet-street.

TO CAPITALISTS.—A particularly ADVANTAGEOUS OPPORTUNITY is OPEN to any PRIVATE PARTY disposed to EMBARK in a known first-rate LEAD MINE, on good terms. Most satisfactory references can be given, and will be required.—For particulars apply to Mr. James, 2, Woodland-terrace, Greenwich.

TO THE MANAGERS OF MINES IN THE CAMBORNE, REDRUTH, AND ST. AGNES DISTRICTS.

GENTLEMEN,—I shall be glad to CONTRACT with you for the SUPPLY of superior NORWAY TIMBER to your MINES, on very moderate terms.
I am, Gentlemen, yours faithfully,
Basset Wharf, April 30, 1850. THOMAS TREGASKIS.

MINING OFFICES, 3, GEORGE-YARD, LOMBARD-STREET, LONDON.—Mr. T. P. THOMAS is a BUYER of SHARES in Wheal Seton, North Pool, South Wheal Frances, Trelawny, Wheal Elizabeth, Cwm Erfin, Levant, Court Grange, Lisburne Mines, and Santiago; and is a SELLER in Alfred Consols, Bedford, Penzance Consols, Pendarves Consols, East Gunnis Lake, East Buller, Gustavus Mines, Stray Park, Tolcarne, Kingsett and Bedford, South Tolgus, Treviskey and Barrier, South Basset, Tincroft, West Wheal Treasury, Wheal Comfort, Wheal Mary Ann, Wheal Margaret, and South Trelawny.

T. P. THOMAS is generally in a position to BUY and SELL at close MARKET PRICES, and will be happy to afford information upon application.
N.B.—MINES INSPECTED.

MINING PROPERTY.—Mr. HERRON has SHARES in the best DIVIDEND MINES FOR SALE, and which will give to the purchaser 17 to 25 per cent. for the outlay; amongst others are the following:—Santiago, Cobre, Alten, United Mexican, Carn Brea, North Roskear, South Tolgus, Tincroft, Bedfords, Great Devon Consols, Treviskey and Barrier, Trelawny, East Wheal Rose, Wheal Comfort, Wheal Margaret, Condurrow, South Basset, Wheal Tremayne, North Pool, South Wheal Frances, and Stray Park Mines.
Mining Offices, 33, Clement's-lane, Lombard-street.

MINING AND SHARE OFFICES, ST. MICHAEL'S-CHAMBERS ST. MICHAEL'S-ALLEY, CORNHILL, LONDON.
Mr. TRIPP, MINE AGENT, transacts BUSINESS (EXCLUSIVELY FOR PRINCIPALS) ON COMMISSION. He is prepared to BUY and SELL in some of the best DIVIDEND-PAYING MINES; also in NEW ONES, having present and prospective advantages, of which the following are some:—

Devon Great Consols, North Roskear, Botallack, Spearne Consols, Condurrow, South Wheal Basset, Wheal Tremayne, Penzance Consols, Alfred Consols, Wheal Penhale, Hennock Silver-Lead, Birch Tor and Vitifer, East Birch Tor, Wellington, Cook's Kitchen, Kingsett and Bedford, Trevilles, Crebor, Ashburton United, Wheal Bal, Wheal Sarah, Wheal Trescoll, Rocks, Pendarves Consols, Gustavus, St. Aubyn and Grylls, &c.

BRITISH AND FOREIGN REGISTRY OFFICE.—PARTIES having MINERAL ESTATES, COLLIERIES, or MINES, FOR SALE, or SHARES TO DISPOSE OF, in DIVIDEND MINES, or OTHERS, by enclosing a list of the number and price of such shares, and particulars of such property, the same will be REGISTERED FOR SALE, and commission charged only on sales taking place. Money advanced if required.—Apply to Mr. DURRANT, 58, Lombard-street, London.

MR. T. A. READWIN, MINING OFFICES,
2, *WINCHESTER-BUILDINGS, OLD BROAD-STREET, LONDON.*

MR. C. S. RICHARDSON, CIVIL ENGINEER, LAND AND MINING SURVEYOR.
No. 15, *OLD BROAD-STREET, LONDON.*

JAMES LANE, MINING SHARE DEALER,
80, *OLD BROAD-STREET, LONDON.*

ANGLO-MEXICAN MINT OFFICE, No. 5, Broad-street-buildings, April 26, 1850.—Notice is hereby given, that the ANNUAL GENERAL MEETING of shareholders in this Company will be HELD at the offices, as above, on Tuesday, the 7th day of May next, when one Director will be elected, in the place of John Stanley, Esq., who goes out by rotation, but is eligible for re-election, and will be proposed accordingly.—The chair will be taken at One o'clock precisely.
G. B. LONSDALE, Secretary.

CAMBORNE CONSOLS MINING COMPANY.—Notice is hereby given, that a SPECIAL GENERAL MEETING of the shareholders of this Company will be HELD at the Company's offices, 22, New Bridge-street, Blackfriars, London, on Thursday, the 23d day of May inst., at One of the clock in the afternoon precisely, for the purpose of sanctioning and confirming the contract agreement and arrangement entered into by the Directors for obtaining the Leases of the Lands and Mines which have been taken for the use of the Company, and for obtaining from the proprietors or other persons interested in a certain shaft, called "Martin's Shaft," situate in Dolcoath Mines, adjoining to the south-eastern boundary of the lands and mines leased to this Company, called the "Camborne Consols Mines Sett," for obtaining the right or privilege of using, either wholly or in part, the said shaft, called Martin's Shaft, for communicating with the several levels of the Camborne Consols Mines sett, or otherwise for the use of this company; and for confirming and ratifying all such payments as have been made under and by virtue of such contract: and also for adopting such resolutions, and giving such directions as may be deemed necessary or expedient for effecting the purposes aforesaid, or in relation thereto.—Dated this 29th day of April, 1850.

By order of the Board of Directors,
H. L. T. VON USTER, Secretary to the Company.

WEST WHEAL JEWEL MINING ASSOCIATION.—Notice is hereby given, that the ANNUAL GENERAL MEETING of the shareholders will be HELD at the Company's offices, as under, on Monday, the 13th of May next, at Twelve for One o'clock precisely. WM. NICHOLSON, Secretary.
57, Old Broad-street, April, 1850.

WHEAL MAY MINING COMPANY.—A GENERAL MEETING of this Company will be HELD at their offices, 15, Old Broad-street, at Twelve o'clock, on the second Monday in May (the 13th), for the purpose of revising the Rules of the Cost-book, and deciding the necessary steps to be taken to raise additional capital to carry out the working of the mine on a much larger scale.
CHARLES SAMUEL RICHARDSON, Purser.
15, Old Broad-street, City, April 25th, 1850.

Transactions of Scientific Bodies.

MEETINGS DURING THE ENSUING WEEK.

THIS DAY	Westminster Medical—17, Saville-row	8 P.M.
MONDAY	Entomological—17, Old Broad-street	8 P.M.
	British Architects—16, Grosvenor-street	8 P.M.
	Chemical—149, Strand	8 P.M.
	Pathological—21, Regent-street, Waterloo-place	8 P.M.
	Medical—3, Bolt-court, Fleet-street	8 P.M.
TUESDAY	Linnæan—Soho-square	8 P.M.
	Civil Engineers—25, Great George-street	8 P.M.
WEDNESDAY	Society of Arts—Adelphi	8½ P.M.
	Geological—Somerset House	8½ P.M.
	Graphic—Thatched House Tavern	8 P.M.
	Literary Fund—73, Great Russell-street	2 P.M.
THURSDAY	Antiquaries—Somerset-house	8 P.M.
	Royal Society of Literature—4, St. Martin's-place	4 P.M.
FRIDAY	Astronomical—Somerset-house	8 P.M.
	Royal Institution—Albermarle-street	8½ P.M.
	Philological—London Library, 12, St. James's square	8 P.M.
SATURDAY	Asiatic—5, New Burlington-street	2 P.M.

ROYAL INSTITUTION.

Dr. FARADAY commenced his spring course of lectures on Saturday last, when a very crowded audience assembled. The title of the series is "Upon some points of Domestic Chemical Philosophy," in which "a fire, a candle, a lamp, a chimney, a kettle, and ashes," form the matters to be illustrated, exhibiting the phenomena of combustion, and their results in their most ordinary modes. In treating of the fire, Dr. Faraday dwelt first on the different kinds of fuel, and divided them into two distinct classes—those which are fixed during combustion and enter into immediate combination with the supporters of combustion, and those fuels which require to be vapourised by heat before they can be burned. Of the first class, charcoal or carbon affords the best illustration, and the inflammation of ether was shown as an instance of vapourised fuel. In the result of combustion there are similar distinctions, some fuel burning without leaving any perceptible product, whilst others leave behind a tangible substance larger than the combustible before ignited. When charcoal, for example, was burned in oxgen gas, it entirely disappeared, and nothing was visible, as it was converted into carbonic acid gas; phosphorus, on the other hand, formed a dense vapour in burning, and lined the inner surface of the glass with a thick coat of white matter. After briefly noticing the general characteristics of fuel and the products of combustion, Dr. Faraday proceeded to consider the construction of the fire-place, and exhibited the original models made by Count Rumford, in the Royal Institution, soon after its foundation, at which the first attempts at the formation of fire-places on philosophical principles were made. Some of those models closely resemble the fire-places at present in use, and it was observed, that little useful improvement in them has been effected since Count Rumford's time. The principle he carried into practice was that of enclosing the fire within a small compass, to avoid the waste of heat up the chimney, and to place fire-bricks at the back and sides of the burning coal, to increase the radiation of heat. In a common blazing fire, the flame does not throw into the room one-tenth part of the heat that proceeds from the hot cinders or coke, and this was explained to be owing to the greatly superior power of radiating heat which carbon possesses. Were it not, indeed, for the carbon contained in coal gas, the heat radiated from it would not be the tenth part of what it is. As examples of the power of radiation in carbon, several experiments were performed. A sheet of tin was blackened on one side, and half of it turned round, so as to present half of its polished and half of its blackened surface on each side. Pieces of phosphorus were stuck upon each, and then held near the fire; when the phosphorus on that half which presented its blackened surface to the fire was speedily inflamed, whilst the other piece was not sensibly affected. A highly-polished silver teapot was blackened on one side, and, being filled with hot water, was placed with its polished side close to the bulb of a differential thermometer without any sensible increase of heat; but no sooner was the blackened side presented to the bulb, than the liquid in the tube of the thermometer was seen to rise rapidly. It is this property which polished metallic surfaces possess, of being imperfect radiators of heat, that makes a metal teapot much better than a china one for extracting the strength of the tea, because it retains the heat longer. In considering the nature of flame, Dr. Faraday observed that we never see correctly the actual form of the flame rising from a bituminous coal fire. The air, which is always rushing towards the flame to supply the oxygen gas necessary for combustion, produces a flickering unsteady motion, which breaks the flame into numerous branches, though these movements are so rapid, that owing to the property which the eye possesses of retaining the impression of an object for nearly the tenth part of a second after the object itself has vanished, the flame seems to be entire. It may, however, be readily visibly dissected, by adopting a contrivance, by means of which the eye can see it only for the tenth part of a second. This is readily done by cutting a slit in a piece of card, and then moving it rapidly before the eye, when the flame seen through the slit appears to be cut into pieces. An ingenious contrivance was adopted for exhibiting this effect on a large scale, so that it might be seen in all parts of the lecture room, the flame employed being that of gas, issuing from a large aperture. A similar effect was produced when the flexible tube that conveyed the gas to the burner was suddenly compressed in rapid succession, so as to check the supply of gas. The The roaring of a flame when blown on, is occasioned by a succession of small explosions; and if a roaring flame be dissected in the manner described, it will be seen to be composed of numerous small flames, each one of which produces a small explosion, and the succession of these explosions occasions the continuous roaring sound. By placing upon the fire an iron tube, funnel-shaped at one end, a stream of coal gas issued from it, which was ignited. This was formerly called the spirit of the fire, and in the middle of the last century, long before the employment of gas for illumination, the gas issuing from such a tube had been collected in bladders by Dr. Clayton, and ignited as it issued from a hole pricked in the membrane. This experiment, which was shown by Dr. Faraday, had a very curious effect, and must have appeared most wonderful before the properties of carburetted-hydrogen were known.

GEOLOGICAL SOCIETY.

APRIL 24—Sir CHARLES LYELL (President) in the chair.

Douglas Denon Heath, Esq., was elected a Fellow. The following communications were read:—

1. On the Diluvium of Wick, Caithness; by John Cleghorn, Esq. In examining the till or boulder clay of Wick, the author had particularly noticed the fragmentary state of the majority of the shells contained in that formation. In accounting for this phenomenon, he considered as inadmissable the action of icebergs grating over the sea bottom, which has been brought forward by some as a sufficient explanation of the existing condition of these shells. The large and strong shells would be broken, as is here the case; but the smaller and more fragile shells also would have been comminuted—a condition which does not always obtain in the till. The author thought, however, that the condition in which small shells and fragments of larger shells, of kinds similar to the till shells, are found in the stomach of the catfish, common on our coast, would be a likely explanation of the condition in which the shells of the till are usually found.

2. On the Occurrence of Marine Shells in the Till, near Airdrie; by James Smith, Esq., of Jordan-hill. In the till or boulder clay, stratified beds of sand, gravel, and laminated clay are of very rare occurrence. These are sometimes found immediately below the till, and are apparently fragments of an older alluvial covering, which has not been entirely removed by the cause, whatever it was, that lodged the till on the surface. In digging a well near Airdrie, some stratified beds were found lying in the till, one of which contained *tellina proxima*, an arctic species abundant in the Clyde pleistocene beds overlying the till. This bed of shells is 510 feet above the level of the sea, and 150 feet higher than the highest level at which any other such beds have been found in Scotland. From the general character of the contents of the shelly beds at Airdrie, and from similar till shells previously collected by the author and others, at Wick, Thurso, Gamrie, Loch Ryan, and Dundee, he concluded that the till and the stratified beds, which lie immediately below and above it, all belong to the same geological period—viz.: to that which immediately proceeded the present, and which has been named by Professor E. Forbes the glacial epoch.

3. On the Bunter-sandstein of the Vale of the Nith; by Robert Harkness, Esq. The author described the extent of the red sandstone of the district adjacent to Dumfries, and gave detailed accounts of the various quarries in which it is exposed. Beginning from below, there are—1. Sandstone flags, with impressions of footsteps similar to those of Corncockle Muir, more than 130 yards in thickness; 2, beds of conglomerate, sometimes passing into sandstone, 100 yards thick; and 3, a series of sandstone and clay beds, containing (at Annan) impressions of the footsteps of *Cheirotherium*, about 100 yards thick. Having considered the probable conditions of the sea that deposited the flaggy sandstones, the author proceeded to state, that the fragments composing the conglomerate were probably derived from rocks of granite and sienite surrounding the bay in which the conglomerate was deposited; and that its sandy matrix was probably derived from the carboniferous grits of Cumberland—a reflux action of the tide depositing the cliff debris seaward, and an afflux of the tide bringing the sand to be deposited amongst the rock fragments.

The following communications will be read on Wednesday evening next, May 8th:—1. On the Geology of Spain; by Don J. Ezquerra del Bayo.—2. On some new Forms of Fossil Plants from the Lower Lias; by James Buckman, Esq.—3. Observations on Dudley Trilobites; by T. W. Fletcher, Esq.

INSTITUTION OF CIVIL ENGINEERS.

APRIL 30.—WILLIAM CUBITT, Esq. (President), in the Chair.

The paper read was "On the Absorbent Power of Chalk, and its Water Contents, under different Geological Conditions," by Professor D. T. Ansted.

After explaining the nature and extent of the chalk rock of England, both geologically and topographically, and briefly describing its chief physical peculiarities, the author proceeded to detail the results of some experiments made for the purpose of ascertaining the positive and relative absorbent powers of different kinds of chalk, when exposed to moisture under various circumstances.

The specimens experimented on were small cubes, each weighing from three to four ounces, taken from different districts, and geological positions, in the upper, middle, and lower beds of the chalk.

From these experiments it appeared, that the upper chalk, when it was to all appearance perfectly dry, contained about one-third part of a pint of water in each cube foot, which was never parted with under any conditions of dryness of the atmosphere; that in the case of an exposed surface of the rock, the absorption from a moist atmosphere would be unimportant, although when water was presented to it in a liquid form, the upper chalk was found capable of receiving into its mass a quantity of water amounting to more than two gallons for every cube foot of rock, beyond the quantity usually contained in apparently dry chalk, under ordinary exposure.

A specimen of the middle chalk, when thoroughly air-dried by six months' exposure, was found to contain about 23 parts of water in 1000 parts; three-fourths of which water were readily given off by subsequent exposure to a perfectly dry atmosphere, very little more than the original quantity being re-absorbed on exposure to a saturated atmosphere; showing that the absorbent power, in this respect, was even less than in the case of the upper chalk. The quantity of water contained in a cube foot of saturated middle chalk was rather more than two gallons.

A specimen of the lower chalk was found to contain more than 10 parts of water in 1000 parts, about three-fourths of which were rapidly parted with, on exposure to a perfectly dry atmosphere; but the rest, amounting to more than the quantity of water contained in the upper chalk, in its ordinary state, was not parted with by any exposure, short of a vacuum. On subsequent exposure to a saturated atmosphere, more than 15½ parts of water in 1000 parts, were absorbed, and when the specimen was saturated, its water contents exceeded 2⅛ gallons per cubic foot,

It was stated, that the upper chalk might generally be regarded as the *conducting*, and the lower chalk as the *containing*, part of the formation, so far as water was concerned; and that chalk must be regarded as a rock, which everywhere admitted the percolation of water, receiving into itself, and conveying to its lower beds, the water that fell on, or was brought to, its surface. This readily explained the uniformly dry appearance it presented, and the absence of any streams, arising from mere surface drainage, where extensive exposure of the rock itself occurred. It also appeared that particular bands of rock contained much more water than others, some, indeed, being apparently, though not really, dry, when below the surface of permanent wetness; while others gave off water readily, and to a large extent.

The probable effect of rain-fall upon the surface of the exposed chalk was then considered, and it was estimated that at least 18 inches descended annually to what was called the surface of permanent wetness, maintaining a general and rude parallelism with the surface of the ground; but when the chalk rock was permanently covered with impermeable soils, as in the London basin, the position of the surface of permanent wetness was liable to extreme variation, and to be most seriously affected, as lateral percolation was then the only source of wetness. On the other hand, it was thought that a large portion of chalk rock existed in a state of uniform and permanent wetness, and that wherever the gault extended, underlying the chalk and keeping up the water, there must be, at and below a certain depth from the surface, a supply of water to the extent of 180,000,000 of gallons for each square mile one yard in thickness; and that the surface of permanent wetness, dependent chiefly on the present rain-fall, was so far above this lower surface of saturation, as to ensure a supply at least equal to one-half of the rain falling on the immediately surrounding district.

The paper announced to be read at the next meeting, of Tuesday, May 7th, was—"On the Application of Water Pressure as a Motive Power, for working Cranes and other kinds of Machinery," by Mr. W. G. Armstrong, Assoc. Inst. C.E.; after which the monthly ballot for members would take place.

INSTITUTION OF MECHANICAL ENGINEERS.

The general meeting was held at the Birmingham Philosophical Institution, on Wednesday, the 24th April.—ROBERT STEPHENSON, Esq. (President of the society) in the chair. The first business brought before the meeting was the adjourned discussion

ON THE DETERIORATION OF RAILWAY AXLES.

Mr. J. E. M'Connell contributed a supplementary paper on this subject, which had already twice occupied the attention of the members. He recapitulated the principle topics formerly introduced—viz.: proper form for railway axles, and the deterioration in axles caused by a change of structure in the iron from vibration or concussion, and cited a few more instances of the effects of jarring upon the texture of iron.—The chairman, in commenting upon the statements made by Mr. M'Connell, remarked that extreme care was necessary in making experiments to prove any theory, and as yet he scarcely was of opinion that the subject before them had received that strict and accurate care which would enable them to come to the conclusion that an important mechanical change was effected in the character of wrought-iron. A number of facts or statements were made, all tending to show that iron once fibrous had by concussion or vibration changed to crystalline, but though proofs were multiplied he did not consider that they incontestibly proved that a molecular change had been effected. He was prepared to admit that the instance cited by Mr. M'Connell, of the conversion of wrought-iron into a brittle material, shown in the case of the chain slings used for carrying the bars during the process of hammering at a forge, did seem to support this theory, and he (the chairman) would concede that jarring or concussion did produce this tendency to fracture, but that the structure of the iron was changed by that vibration was by no means proved. Since the last meeting he had examined a piece of iron with a powerful microscope, and he found that what were called "fibres" were no more than a vast agglomeration of crystals. In a piece of the finest laminated iron, where the fibrous structure was indicated by a series of light and dark lines, the microscope revealed that this apparently fibrous formation was simply a mass of crystals lying in a peculiar way. He concluded, therefore, that this iron when broken across it a certain angle, would show the face of these crystals, and so seem to favour the theory of a change of mechanical structure. As to the slings spoken of, he could easily conceive how, in the material of which they were made, these might be points that would act as nodes, which impeded the passage of the wave of vibration, and the particles on each side having, as it were, double duty to perform, separated at certain planes, and showed a granular surface. His opinion seemed to be that though no mechanical change took place in the structure of iron, by jarring or concussion, that in certain conditions, probably by the stoppage of the wave of vibration by the intervention of nodes, wrought-iron broken across in certain planes exhibited a crystalline appearance.—Mr. W. A. Adams quite agreed with the President in his theory.—Mr. M'Connel must adhere to his former opinion, that the whole structure of the iron becme changed by concussion. Fibre, he would admit was a misnomer, but that iron of a peculiar texture assumed another condition by this vibration, was he conceived, a mechanical fact.—The discussion then diverged into the questin of the tensile and elastic strength of iron, the President instancing some apparently brittle plates supplied to him for the erection of the Britannia tube, which, when tested by Mr. Clarke, were found to posseas more tensile resistance han those that were more fibrous. He remarked that the system of testing iron by the pump was superseded, in his estimation, by the gradual accumulation of weight, and he considered that this mode had dispelled the delusion that the resisting power of iron was 24 tons to the square inch; 16 or 18 at the outside was the maximum. After some further remarks by Mr. Slate, Mr. Cowper, and others, the discussion terminated.

ON RAILWAY CARRIAGE AND WAGGON SPRINGS.

The adjourned discussion on the paper read by Mr. W. A. Adams, at the former meeting, was resumed by the reading of a summary of the former observations, and a description of a laminted bearing spring, made by that gentleman, in which a considerable saving of material was effected, and the spring was made serviceable throughout its whole length. To avoid the bracing in the centre of the spring, which renders about four inches of the mass inert and useless, the plates are merely held together with a clip, and instead of a bolt-hole, the plates are studded into each other at the centre. The weight, exclusive of the hoop, is 59 lbs. instead of 91lbs., and the deflections of this spring were the following:—Half a ton, half an inch; 1 ton, 1 inch; 1½ ton, 1½ inch; 2 tons, 2 inches; 3 tons, 3 inches; 4 tons, 4 inches; no permanent set in the experiment. The advantages of the improved spring were stated to be, that inasmuch as from the correct theoretical form, and absence of the centre rivet or bolt-hole, every particle of materials doing equal duty, the spring will be more lasting; and also that, from the reduction of material, the first cost will be materially lessened.—The President remarked that they were all much indebted to Mr. Adams for the valuable information he had given to the meeting on a vital subject; and in the course of the conversational discussion that ensued, it was contended—first, that the flat form of spring, such as that in general use in railway carriages, was the most sensitive and the most useful; but in answer to this, it was held that when the maximum weight was placed upon such a spring, it became practically a tension rod. It was preferable to have a spring not liable to attain rigidity, although it might not be quite so sensitive, and that property the cambered spring was held to possess. The Messrs. Wright, of Saltley, Mr. M'Connell, and others, took part in this portion of the discussion.—Mr. Ross started a few objections to the improved spring of Mr. Adams, first, with reference to the nib which held the plates together, which he maintained, were scarcely less objectionable than the rivet holes; and next as to the absence of a bearing of wood. He considered that a block of oak or ash would be a far more effective point than the hard and unimpressible axle-box. The former position was controverted, and it was conceded that, supposing it possible to fix the wood sufficiently, such a bearing point might be an improvement.—In the course of the discussion, Mr. De Bergue read a reply to Mr. Adams's former criticism of the vulcanised India rubber buffer spring of that gentleman. He showed that Mr. Adams's figures were erroneous, and, consequently, his deductions incorrect.—At the conclusion of the discussion, a vote of thanks was unanimously given to Mr. Adams.

ON BALANCING THE RESISTANCE OF THE AIR-PUMP IN CONDENSING ENGINES.

A paper on this subject, contributed by Mr. George Heaton, of Birmingham, was read by the Secretary. This paper referred to some alterations made by the writer on a steam-engine used for grinding corn, which was irregular in its action, causing a considerable strain, and performing its work inefficiently. Mr. Heaton fixed a weight at the crank end of the engine beam, weighing nearly a ton, which, from its position, was equivalent to one-half the pull of the air-pump bucket. By this simple alteration, the engine which previously made 17¾ strokes per minute, now made 19½, so as to drive the stones at about 128 revolutions per minute, instead of 117, the former speed; and it now drives 13 pairs of stones with more apparent ease than it drove eight pairs before. The writer considered that the pull of the air-pump does not receive the consideration it requires from engineers, and hence the present paper.—The Chairman remarked that they were all very much obliged to Mr. Heaton for bringing a subject before them which could not be too often pressed upon the attention of mechanical engineers. Although it was not, perhaps, practicable to apply to locomotives generally the admirable system of balancing introduced by him, still great credit was due to Mr. Heaton for his valuable researches. After a few words from Mr. Heaton, the subject dropped.

The adjourned discussion of Mr. Smith's paper "On the Condensation of Steam in the Engines of the South Staffordshire District," was not resumed, owing to the unavoidable absence of the writer. Several new members were announced to have been elected, and the meeting separated.—*Birmingham Journal.*

FURTHER INVESTIGATION OF THE PHENOMENA ATTENDANT ON IMMERSING THE HANDS IN MOLTEN METAL.—Desirous of obtaining some satisfactory explanation of the phenomena noticed by M. Boutigny (says M. Corne, in a paper submitted to the Paris Academy of Sciences), I determined on further investigating this curious subject. If M. Boutigny's view of the case be correct, the employment of liquid sulphurous acid for moistening the hands should produce a sensation of coldness when they are immersed in the melted metal, since sulphurous acid, in its spheroidal state, is at a temperature of 10° C. below Zero. Experiment proved the correctness of my opinion, and on immersing my hand, previously moistened with sulphurous acid, in the melted lead, I experienced a sensation of decided cold. Lest there should be any doubt on the subject, I requested some other persons to try the experiment, and in such case the same sensation of cold was experienced. I then wished to try some experiments on cast-iron in a state of fusion. I inquired of M. Covlet, the iron founder, at Laval, whether he had ever noticed any facts analogous to those mentioned by M. Boutigny. He replied, that neither he nor his workmen had ever seen anything similar, except that sometimes globules of the heated metal were thrown on the hands of the workmen, and that, on one occasion, he had accidentally dipped his finger in the fused iron, without experiencing any inconvenience; this, however, he looked upon merely as a lucky escape. I then repeated, in his presence, the experiments on heating, as well as on the formation of ice in a red hot crucible, into which sulphurous acid and water had been thrown. We then repeated the experiment of immersing the hand in melted lead and in fused cast-iron. Before experimenting with the melted iron, I placed a stick, previously moistened with water, in the stream of liquid metal, and on withdrawing it, found it to be almost as wet as it was before, scarcely any of the moisture was evaporated. The moment a dry piece of wood was placed in contact with the heated metal, combustion took place. M. Covlet and I then dipped our hands into vessels of the liquid metal, and passed our fingers several times backwards and forwards through a stream of metal flowing from the furnace, the heat from the radiation of the fused metal being at the same time almost unbearable. We varied these experiments for upwards of two hours; and Madame Covlet, who assisted at these experiments, permitted her child, a girl of nine years of ago, to dip her hand in a crucible of red hot metal with impunity. We experimented on the melted iron, both with our hands quite dry, and also when moistened with water, alcohol, and ether. The same results were obtained as with molten lead, and each of us experienced a sensation of cold when employing sulphurous acid.

EUROPEAN IMPORTANCE OF A SUBSTITUTE FOR COAL.—Wood is still the chief fuel for all purposes in most parts of Europe, Great Britain excepted; but it is vain that the forests are relied upon to supply the great demand—they are disappearing, and wood is every day becoming scarcer and dearer, and many manufactories, dependent for their success (as almost all are) on a cheap and abundant supply of fuel, cannot be established at all, or, where existing, gradually decay; the expense of travelling is also increased, where coal for steamboats, or coal-coke for railway trains, cannot be readily procured. In fact, the cost of wood begins to be felt even in Russia and Poland, where we might have imagined the supply to be inexhaustible. In France, in Prussia, and throughout Europe in general, the coal-fields are "few and far between," and seldom of good quality; hence, the demand for English coal is becoming great and constant, and whole districts are dependent on this country; so that the least interruption of the supply, whether from natural or political causes, creates the greatest embarrassment. Two or three facts will fully illustrate this:—During the recent blockade of the Elbe and of the Prussian ports in the Baltic, the supplies of English coal, from which the Hamburgh and Berlin Railway and other companies make their coke, became cut off; and if the differences between the courts of Berlin and Copenhagen had not been settled, so far as to raise the blockade, the traffic of the railways must have been stopped, for a while, at least, and could only have been renewed by altering the engines and using wood, at infinite trouble, delay, and cost. In the early part of last December, English coals, transferred from vessels at Dantzic into boats navigating the Vistula up to Warsaw, were kept fast in the ice during the whole winter; the consequence was, that a large iron factory at Warsaw, conducted by some enterprising Englishmen, was greatly embarrassed, and the repairing works o the Warsaw and Cracow Railway were all but brought to a stand. And to go further north, the iron establishments in St. Petersburgh, particularly those large ones under the direction of Englishmen or Americans, are virtually dependent on English coal and coal-coke, and are not unfrequently affected for want of it before the end of a long winter; and the great towns of Moscow and Toola, in the interior of RUSSIA, which would compete with the products of Sheffield and Birmingham, draw their iron from the distant regions of Siberia, although some of the districts near them can furnish the finest iron ores, which the scarcity and dearness of wood, chiefly, prevent being advantageously smelted for their use.—C. VIGNOLES.

EXHIBITION OF 1851—REGULATIONS REGARDING THE EXHIBITION OF MACHINERY IN MOTION.—The commissioners being desirous of affording every facility to those persons who may wish to exhibit machines or trains of machinery in motion, have resolved to allow such machinery to be managed and worked, as far as practicable, under the superintendence of the owners and by their own men. The commissioners will also find steam, not exceeding 30 lbs. per inch, gratuitously to the exhibitors, and convey it in clothed pipes to such parts of the building as require steam-power. Parties sending machines or articles requiring to be driven by steam should send with the same a small portable steam-engine, to which a steam-pipe can be laid on. The above will apply to all engines from 1-horse power to 6-horse, beyond which power, it is presumed, no single branch of manufacture or article will require steam-power. As regards machines too small to require an independent portable engine, arrangements will be made to place them in groups, to be exhibited in communication with some steam-engine, also sent for exhibition, in motion. Exhibitors proposing to exhibit portable steam-engines should understand that their engines may be employed for driving other machinery, unless the owners of the steam-engines object to such use.

MACHINERY IN RUSSIA.—Machines for cotton and flax spinning, and for cloth factories, are, by Russia, principally imported from England. The importation is duty free. The value (in silver roubles) of the machines imported was, in 1842, 517,208; 1843, 975,386; 1844, 1,318,092; 1845, 1,630,529; 1846, 1,918,972; 1847, 1,884,847. There are several large factories in full operation in Moscow, which produce very creditable locomotives and fixed engines. Iron steamers have also been built, which have been very favourably reported on. The smaller kinds of machinery are made in great perfection, and the mechanics employed are, in this instance, chiefly Russians. The value of the machinery made in Moscow, during the year 1848, amounted to 100,000 silver roubles, hardly a tenth of the value of the quantity imported.

The mixed commission appointed conjointly by the Prussian, Belgian, and French Governments, and comprising also delegates from the Rhenish Railway, and the Northern, Rouen, and Havre lines, which lately met at Paris, for the purpose of consulting as to the best means of establishing a well-arranged plan of international railway communication, has just completed its labours. The result is the adoption of an arrangement between the three Governments and the railway companies interested for speedily putting in operation the customs convention concluded between the three Governments in 1848, which accords great facilities to unshackled international communication. There is little doubt that a bridge will speedily be thrown over the Rhine, in connection with the great railway line between Cologne and Paris; and as soon as this is the case, and the other proposed arrangements for transit have been completed, the great benefit of the alterations which have been effected will be felt, as goods will be dispatched from the *entrepôts* at Havre or Antwerp direct to the Baltic, without undergoing the tedious and dilatory examination of the customs establishments of the various states traversed on the passage.

FOREIGN INTELLIGENCE.

CALIFORNIA.—We have advices from San Francisco to the 1st March, received from Chagres by the steam-ships *Empire City* and *Cherokee*, which arrived at New York on the 5th inst., the latter with a specie freight of upwards of $1,053,000 consigned to various mercantile firms. From San Francisco the mails were received at Panama, on the 20th ult., by the steamer *Oregon*, and in addition to a large number of passengers, 292, she had gold dust on freight, &c., to the value of $2,300,000.

The *Empire City* sailed from Chagres on the morning of Tuesday, the 26th ult., and the *Cherokee* at noon on the same day. The *Cherokee* made the run from Chagres to Port Royal in 54 hours, went up to Kingston at seven P.M., on the 28th, worked all night, and having put on board 200 tons of coal and 8000 gallons of water, &c., sailed thence at half-past 10 on the following morning, making the detention there only 15½ hours. The *Cherokee* was absent on this voyage only 20 days, during which time she sailed over 4200 miles, and laid in port 2½ days, thus making the passage out and back in the quickest time on record.

From San Francisco we learn, that since the departure of the steamer of the 15th April affairs had assumed a more prosperous aspect. The rivers of the Sacramento Valley had retired to the rocky beds, and the towns having become accessible, business had become brisk. Steps were being taken to prevent the recurrence of similar disasters by the construction of levees, &c., and the authorities had ordered the lands on the river to be cleared for the purpose.

Money still continued to command high rates of interest—viz.: 10 to 15 per cent. per month; but the quantity of gold dust in possession of the miners was very large, and they were taking advantage of the weather to bring it down to San Francisco. Succeeding steamers, it is believed, will, therefore, bring away larger amounts than have yet been shipped by any one steamer.

The *New York Commercial Advertiser* publishes the following letter, dated San Francisco, March 1:—"Business is reviving for the spring trade, and the miners are coming down for supplies, and others are leaving for the mines. The yield of gold is quite as large as in the summer of 1848, and as large as at any time last year. The rains of winter have done all that could be desired for the mines, discovering new bars and developing unexhausted diggings. Health at the mines was generally good. There is the usual amount of sickness on the banks of the Sacramento and San Joaquin. In San Fancisco there is much sickness from exposure and insufficient lodgings."

A letter dated Stockton, Feb. 15, states that the information received from the southern mines was generally quite encouraging. The miners were in excellent health and spirits, having passed a pleasant winter in their mountain huts. Provisions were generally plentiful and not dear. New diggings had been discovered on almost every stream and ravine, and miners were only waiting for settled weather. The largest number of persons congregated in any single section of the southern mines was in the Mariposi country. The whole region of country extending from Mercedes to Fain Mariposi exhibited externally better evidences of gold than any other section of the southern mines. It is said that a 93 lbs. lump had been found near Stanislaus.

The disturbances between the Americans and Chilians had been adjusted. The emigration of foreigners had continued throughout the winter from South America, New South Wales, China, and the Hawaiian Islands. The emmigration from South America had sensibly diminished.

From January 29 to February 27, there arrived in San Francisco by sea, 2183 passengers, of whom 147 were females. The amount of tonnage which arrived in the same period was 29,712; the total amount from April, 1849, to the latter date, 313,351.

San Francisco continues to improve with the same wonderful rapidity. It now boasts of three daily papers and two theatres, besides numbers of handsome brick dwellings. The merchants seem nowise deficient in the proper spirit of enterprise. At a meeting held for the formation of an independent Pacific Steam-Ship Company the project was at once adopted, and $500,000 subscribed towards it within two weeks. The capital is placed at $1,000,000, One of the San Francisco papers states that from January 1 to February 1 there were mailed and sent from the post-office in that city 67,000 letters and 5000 newspapers. Mr. Moore, the postmaster, is building a new post-office at his own expense. All branches of enterprise have taken speedy root in the soil of California. Steam communication is now regularly established on all the navigable rivers, and it will not be long before the railroad and telegraph will bring her to a level with the Atlantic States. On February 1, a petition was presented to the Legislature for the incorporation of a magnetic telegraph company—the line to run from San Francisco to Josè, and thence to Stockton and Sacramento City.

Lieut. Dner, U.S.A., proposes to build a marine telegraph to communicate with San Francisco from the sea, and asks of the city council $2000 to begin the work. A petition has also been presented to the State Legislature, praying that general corporation laws may be passed speedily, in order that a company may be formed to start a railroad between Sacramento city and Culloma. This great enterprise must tend to increase, beyond conception, the size of the two places which it will connect together. The road, probably, would not stop at Culloma, but several branches would extend from that place into the northern and southern mines. Thus the wealth of the gold region could not fail to pass through Culloma and Sacramento. The termini of all branches would also be centres of considerable importance. The "floating population" is gradually drawing off, and digging implements are taken up again. All, to speak comparatively, are preparing for the mines, whence great stories of marvellous luck are wafted with every breath from the gold region. Those who have remained in the various diggings have laboured at intervals during the winter with astonishing fortune. The *Alta California* says, that from 3 ozs. to $500 the yield per diem has ranged for individual labour. We have heard of still more extraordinary results.

The use of quicksilver had been extensively adopted by the miners, and the yield of gold thereby greatly increased. The Virginia or "Burke Rocker," which is sold at $250 at the mines, produces from 10 to 20 ozs. per day from dirt that contains only 15 cents' worth of gold to the bucketfull. Formerly dirt that contained less than 25 cents was not considered worth the working. In the diggings near Georgetown, on the American Fork, the miners averaged ½ lb. per day through the winter; this, however, was in the particular ravine of extraordinary richness, called the "Oregon Canon." At Mormon Island, where the ground was dug over last summer till hardly ½ oz. per day could be realised, the recent freshets have so changed the deposits that miners have since been able to do better in the very same localities than at any time last summer, often obtaining 2 ozs. or 3 ozs. per day. With the exception of a slight disturbance among a portion of the population at Hangtown, a flourishing settlement situated near Weaversville, on Weaver's Creek, everything is quiet among the miners.

"One of the passengers by the *Oregon* has with him a lump of gold weighing fourteen pounds—real value, $3780, but $4000 has been offered for it. He intends exhibiting it in the United States. The fortunate finder of this lump had toiled without success for several months, when he was thus suddenly and amply rewarded for his exertions."

THE LARGEST LUMP OF CALIFORNIA GOLD.—We have seen in the possession of J. Perkins, Esq., Astor House, the largest lump of gold yet found in California. It is larger than the one sent to Queen Victoria. It is composed of quartz, sprinkled with small cyrstals, weighs 14 lbs. 7 ozs., and contains 13 lbs. of gold It is valued at $3400. It is egg shaped, 8½ in. long, and about 6 in. in diameter at the centre. This specimen was found on the north fork of the American river, in January last. It was found among quartz rocks, and presents the appearance of having been washed by a running stream, or of having been polished by attrition.—*New York Herald.*

Dr. Alexandre, from Paris, has invented a sort of sub-marine boat, in which a company of persons can go down to the bottom of a river, have communication with the ground, perform any kind of work by digging or otherwise, and return to the surface when they please. Such an invention would soon pay all expenses, and clear a fortune of gold besides, if applied in the rivers of California, where the gold cannot be reached on account of the water. No scientific person can entertain a doubt of the value of this invention, and its facility of being put in practice, after seeing and examining the drawings and models at Mr. Bishop's. Such is this wonderful invention, which is calculated to work a revolution in California in the method of gathering gold.—*Ibid.*

SOUTH AUSTRALIA.—Files of intermediate papers from Adelaide have been received. They give no further news of interest, but the excitement occasioned by the organization of public companies for gold washing on the streams of the Onkaparinga is alluded to, and the circumstances of the discoveries made in that district are fully confirmed.

The recent depreciation in Burra shares is owing principally to the absolute sales of a large holder, who wished to realise, with a view to distant investments.

The *Emu* has brought up 12 tons of very rich ore from the Port Lincoln Mine, with the most encouraging report that there is now 500 tons of equally valuable ore in sight at the mine. The shareholders are in high spirits.

ENTERPRISE MINING COMPANY.—The agent's report from Lyndoch Valley has been received. A previous report stated that it was expected to intercept the same course from which they were then obtaining ore at two other points. The agent has been indefatigably employed, and his prediction has been fully realised, in his letter bearing date 3d inst. There are now three points from which ore will be obtained, the course being known about 20 fms. in length, and 6 fms. in depth—the width being from 4 to 5 ft.; so that, after nearly three years' patient perseverance, the Enterprise proprietors are likely to reap a rich harvest.

NAIRNE CONSOLS.—This company is quietly and unostentatiously, but, it appears, very successfully, operating upon the mineral section near Nairne, leased by it from Messrs. Smillie and Lorrimer. We have been favoured with an inspection of samples of ore now being brought to grass, of which there is said to be *thousands of tons* easily accessible, and which it is believed will yield 70 ounces of silver to the ton of ore. We think this surprising discovery is likely to impart an impetus to the progress and prosperity of the district, and a value to the adjacent property of which few are aware.—*Adelaide Obs.*, Jan. 6.

PORT LINCOLN.—Eight sections at Mount Liverpool were purchased at the Government sale. They contain copper ores, and a company formed previous to the sale is about to commence operations. Two sections have been purchased at Tunby Bay, the shipping place of the Port Lincoln Mine, and also for the New Mount Liverpool Mine

THE RHINE.—Five mineral sections, a few miles east of Wheal Barton, were purchased at the land sale. From some surface specimens, we augur very favourably of this mine.

PORT LINCOLN MINE.—Intelligence has been received that the water shaft had been completed, and that large masses of ore are now being received.—*S. Australian*, Jan. 4.

GOLD IN SPAIN.—A letter from Leon, of the 22d, says that multitudes of persons are attracted there by the reports of gold-dust having been found in various districts of that province, and that washings are going on at the margins of the Sil, Duerno, and Cabrera. The writer himself had seen two *adarmes* (a drachm) of gold-dust, and says that great expectations are entertained when improved machinery shall be put in motion for the operations.

SILVER IN SPAIN.—A letter, dated Madrid, April 25th, says—"The large amount of silver bars, which are now received with regularity from the mines of Sierra Almagrera, and of Guadalajara, enables the Mint to coin dollars and pesetas in very considerable quantities; 80,000 ounces were received at the Bank, two days since, from Sierra Almagrera, the mines of which supply, at an average, to the value of $100,000 per month, and those in the province of Guadalajara about $30,000 worth."

FOREIGN ARRIVALS AT SWANSEA.—Among the arrivals since our last have been the following:—The *Pascoe Grenfell*, from Cuba, with a cargo of 525 tons of copper ore, consigned to the Cobre Company; the *Young Queen*, from Cuba, with 430 tons of ore, to the same company; the *Swansea*, from France, with 100 tons of copper regulus, consigned to Messrs. Bath and Son; the *Sir Isaac Lyon Goldsmid*, from Cuba, with 336 tons of copper ore, for Mr. J. Richardson; the *Burncoose*, from Rouen, with 63 tons of copper regulus, for Messrs. Bath and Son; the *Stineslas*, from Havre, with 67 tons of the same, likewise consigned to Messrs. H. Bath and Son.—*Swansea Herald.*

COMPANIES PROCEEDING UNDER THE WINDING-UP ACT.

FALMOUTH, HELSTON, AND PENZANCE.—On Saturday, Master Sir George Rose proceeded with the settlement of the third list of shareholders in this concern, containing 275 names, and decided that all those were liable to contribute towards defraying the 6000*l.* outstanding liabilities, who had not by letter, or otherwise, repudiated their allotment of shares upon application made for such allotment. It was contended that, in consequence of the company not being completely registered, there was no partnership and no liability, but his Honour decided that the objection, if entertained at all, must be taken to the court. A contributor, who had been summoned, admitted having applied for shares, but stated that he only discovered "the day before," that any had been allotted him, though the distribution took place in 1845. (Laughter.) He would ask Mr. Harvey, the promoter and petitioner, whether the allotment was made with an intention of carrying out the scheme, or with the view of "hooking" in parties to pay the expenses? (Laughter.) Mr. Harvey replied that the intentions were purely *bonâ fide*, and that the preliminary and parliamentary work could not have been done better, and that the first persons at Penzance and other places were on the provisional committee.—The Master: You are fixed.—Contributor; It is a case of swindling.

MADRID AND VALENCIA.—On Saturday a numerous meeting of parties interested was held before Master Blunt, for the appointment of one or more official managers, to investigate and wind up the affairs of this concern. Mr. James, Q.C., Mr. Daniel, Mr. J. H. Palmer, Mr. Russell, Mr. Glasse, and Mr. Bagshawe attended to watch the proceedings. The names of the gentlemen proposed to fill the office of official manager amounted to ten. They were—Mr. Henry Norris, Mr. H. Adron, Mr. G. C. Begbie, Mr. Ernest, Mr. F. Ewart, Mr. Goodchap, Mr. Harding, Mr. Quilter, Mr. Franklyn, Mr. Ainger, and Mr. Abraham. A discussion of some hours, in which the before-named gentlemen, and Mr. David Wire, Mr. Daniel Whittle Harvey, Mr. Field, Mr. Galsworthy, and others, took part, relative to the ability and business qualifications of the respective candidates ensued. His Honour said he should take time to read the affidavits, before deciding on the gentleman to be appointed. On Monday the Master appointed Mr. Quilter, accountant, to be the official manager.

BRIGHTON, LEWES, AND TUNBRIDGE-WELLS.—On Monday the Master who has the settlement of this concern, fixed, as contributories towards the payment of outstanding liabilities, the names of 200 persons who stood in the position of having received letters of allotment in reply to applications for shares.

DIRECT LONDON AND EXETER.—On Monday a meeting of the parties interested in the winding-up of the affairs of this undertaking was held before Master Brougham, when Mr. Bagshawe, who appeared for Mr. Sharp, and Mr. H. Clarke, for Sir Bruce Chichester and other directors, intimated, on behalf of their clients, that they were not content to take the decision of the Master that the official manager, and not a class of the contributories, was the proper person to prefer the charges against the directors, relative to the large amount of funds (32,000*l.*) dealt with by them both individually and jointly, whereupon the Master granted a certificate of the fact of his having overruled the objection, but giving the parties power of appeal to the Court of Chancery, Mr. Bagshawe urged at lenth that a charge, if brought at all, should be laid against the directors *in globo*, and not individually, and that as a new charge had been brought in by the official manager, the three original charges imputing fraud should be withdrawn. His Honour decided that he had no power under the Joint Stock Winding-up Act to allow these documents to be withdrawn from the record, nor did he think the Court of Chancery had; but he would only disallow them so far as they sought to charge the said directors with any sums of money, without allowing them to discharge themselves from any part thereof, seeing that parts of the charges might hereafter be made use of for charging the directors with moneys they had received and were accountable for, and from which they might discharge themselves; and, as regarded the application for costs, they must abide the result of the discharge.

DIRECT EXETER, PYMOUTH, AND DEVONPORT RAILWAY.—On Wednesday, Master Sir W. Horne proceeded with the settlement of the the list of provisional directors of this scheme liable to a *pro rata* assessment, to pay off outstanding liabilities. The Master declared that the name of Mr. F. Chambers must be placed on the list as liable, it having been proved in evidence that his name appeared on the list of provisional directors, and that he attended meetings in connection with the scheme. Captain Ford, who was summoned, asked Mr. Farrant, secretary of the company, whether he did not tell him to take his name off the provisional prospectus, and on the secretary saying he thought it was so, the Master intimated that the name of Captain Ford would be taken off the list as liable. In deciding on the case of Mr. Prance, who on applying for 500 shares had them allotted, but made no payments on them, the Master decided that although these shares were allotted on the basis of some alleged legal condition, he must decide on that gentleman's liability in connection with these shares. On it being shown that Mr. Thomas Besley requested the secretary to enter his name on the list of the provisional committee, and that he attended meetings of that body, his name was fixed upon the list.

DIRECT LINCOLN AND HULL, AND HULL AND YORK RAILWAY.—On Thursday Master Kindersley opened his inquiry into the affairs of this company, which, on the petition of Benjamin Clements, late of Lowndes-square, it appears was started in 1845. The provisional committee allotted 16,000 shares, and deposited plans and sections, but the measure was not proceeded with in Parliament, in consequence of the non-payment of the deposits. The liabilities, amounting to 5800*l.*, it was agreed that 76 members of the provisional committee should subscribe a rateable proportion of 77*l.* each to pay them off; and a finance committee, consisting of Messrs. L. S. Lyne, B. Clement, J. Pearson Bell, C. T. West, and H. C. Sherwin, was appointed to investigate and discharge all debts. Very few members of the provisional committee responded to the call, and there is now only a sum of 40*l.* at the bankers, subject to the order of the finance committee, who refuse to sign any cheques, in order that Messrs. Clement and Lyne may be reimbursed what they have been compelled to pay in discharge of the company's debts. There are still outstanding liabilities to the extent of 2000*l.*, for 1800*l.* of which actions are now pending against the petitioner. The liability and amount of *pro rata* contribution on the part of the several members of the provisional committee have now to be dealt with by the Master.

SHROPSHIRE MINERAL RAILWAY.—On Thursday Master Kindersley decided on appointing Mr. H. Adron, accountant, to be the official manager for investigating on behalf of the shareholders into the question of the application of this company's funds. There were five other candidates.

LANCASHIRE, CHESHIRE, AND STAFFORDSHIRE RAILWAY.—The affairs of this concern are to be wound-up, and as a preliminary step thereto, creditors are to appear and prove their debts before the Master.

TRING, READING, AND BASINGSTOK.—The dividend of 10s. per share from the assets accruing under the winding-up of this company, is now in course of payment on between 5000 and 6000 shares.

GREAT NORTHERN RAILWAY.—Mr R. Clive has reported from the committee on this company's bill, for deviations and alteration of tolls, that the works to be constructed consist only of deviations at Doncaster, and of two short curves at Peterborough, the construction of which will not involve the necessity of additional capital. The steepest gradient is 1 in 100, and the smallest radius of a curve 11 chains. The length of the deviation at Doncaster is 1½ mile, and of the curves at Peterborough 3 furlongs. The estimated cost of the proposed new works is 36,500*l.*, and there will be a saving of 14,800*l.* by the alteration at Doncaster. The quantity of land required for the curves near Peterborough is 6½ acres; for the curves at Leeds, 2¾ acres; and for the deviation at Doncaster, 12¼ acres. Mr. Cubitt was examined in support of the bill, and no engineer was examined in opposition to it. The committee considered the proposed increase of tolls, and, in compliance with the report of the Railway Commissioners, have adopted with some few exceptions, the scale of toll charged on the London and North Western Railway. The new scale fixes the maximum rate of charge to be made by the company. The committee amended the preamble of the bill, by striking out that portion of it relating to the construction of the curve to the Leeds Central Station, and found the allegations in the preamble, as amended, to be true, and made several amendments.

SOUTH-EASTERN RAILWAY.—The Lord Chancellor has discharged the injunction granted by the Master of the Rolls against this company's paying the dividend declared on the 14th of March.

NORTH STAFFORDSHIRE RAILWAY.—Sir C. Lemon reported from the committee that the object of the Bill was merely to enable the company to extend the time for the purchase of lands authorised to be taken on branches to Newcastle-under-Lyme, Silverdale, and the Apedale Iron-Works. They had made a verbal amendment in the Bill, and found the same, as amended, to be true.

SOUTH STAFFORDSHIRE RAILWAY.—The remaining portion of this line of railway communication between the mining and iron districts of South Staffordshire and East Worcestershire, and the midland and northern counties of England, has been opened throughout for passenger traffic. The event is of considerable interest to the neighbourhood of Dudley, inasmuch as, with its large population, and the centre of the iron manufacture, it has never before enjoyed any railway communication either with Birmingham or any other part of the country. The South Staffordshire line commences at Dudley, where it forms a junction with the Oxford and Wolverhampton; it proceeds through the coal-field and mineral country to Great Bridge, Wednesbury, Walsall, Lichfield, and Alrewas, where it joins the Midland. About 1½ mile from Walsall, at Bescot-bridge, it runs into the London and North-Western; and by this means Birmingham is reached from Dudley in half-an-hour. The communication between these towns will be a great public convenience; but almost as a matter of course, when the more direct line of the Stour Valley Railway is opened, the traffic in minerals, iron or passengers, will be again diverted into a shorter route.

WATERFORD AND KILKENNY.—The committee have passed the preamble of this company's bill for enabling them to raise a further capital of 200,000*l.*

THE WOODS AND FORESTS AND THE BIRKENHEAD DOCKS.—The Birkenhead Docks Bill, after having received the unanimous sanction of the Select Committee of the Commons, conveyed in the most marked manner by the chairman (Earl Jermyn), is said to be now threatened with the veto of the Crown. The intimation of this intention has created considerable sensation. It is understood that Mr. Roebuck, who, during his recent visit to Liverpool, has made himself familiar with the topography of the left bank of the Mersey, has spontaneously taken up the question on its merits, and intends to have canvassed in the House the Crown's right to arrest a vast undertaking of this nature, his notion being that the reclamation of the foreshore and the various other improvements are a vast public benefit, for which the Woods and Forests, as guardians of the general welfare, are largely indebted to the promoters of the bill, and should assist, instead of resisting, the objects of those gentlemen. But though the Birkenhead trustees are preparing for the menaced opposition, there is surely ample guarantee against the exercise of an odious prerogative in a matter of this nature, and at a period like the present, in the public spirit and manly good sense of Lord Seymour, whose admirable reports as chairman of the Army and Navy Expenditure Committee show a complete exemption from the pedantry of red-tape routine, and a discriminating appreciation of the fact that the true interest and dignity of the Executive can never be antagonistic to the benefit of the community. He is about the last man who, on behalf of his department, would discover cause for alarm, in the prospect of manufactures springing up on Wallasey Pool, as one of the immediate consequences of the emphatic decision of the Commons' Committee; and his lordship's character generally is a warrant that, as far as he is concerned, there will be no necessity for any such course as the Member for Sheffield, and various Members of both Houses, would feel called upon to adopt, should there be any attempt to withhold the royal consent from the Birkenhead Bill, without which those stupendous works, in whose progress the whole mercantile community are interested, and on which, and other works connected with them, not less than 2,000,000*l.* sterling have been expended, can never be completed.

IMPORTANT DISCOVERY.—The *Débats* publishes the following letter from Constantinople:—"The Ambassador of France has received information of an important discovery made in the neighbourhood of Erzeroum, of an extensive bed of coal, specimens of which have been distributed to the consular body in the locality. The province of Erzeroum has, hitherto, been without combustible materials, and the only fuel of the poor is the dried dung of the cattle. The country, though very productive, is excessively cold, and the thermometer descends as low as 25° below zero. The importance of this discovery may be, therefore, readily appreciated, and is, probably, but the prelude to other and more valuable ones, for foreign scientific men have already explored the mountains of that part of Turkey, and have positively stated that the soil, bearing an analogy to that of the Altai, in the north of Russia, should contain mines of gold and silver. The Turkish Government, it is said, intends to have the mine worked by the Governor of the province, who will pay a considerable revenue to the State."

IMPROVED LIFTING JACKS,

MANUFACTURED BY

W. AND J. GALLOWAY,

PATENT RIVET WORKS,

MANCHESTER.

IMPROVED RATCHET JACK.

HALEY'S PATENT LIFTING JACK.

*** The attention of parties who employ

Lifting Jacks,

is respectfully requested to the superiority of those annexed, over those hitherto in use.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

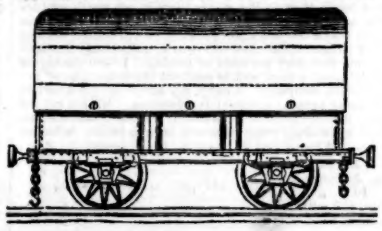
IMPORTANT TO RAILWAY COMPANIES, CARRIERS, AND OTHERS.

ROWLAND BROTHERHOOD'S TILT, for COVERING RAILWAY TRUCKS, WAGGONS, &c.

This invention allows of trucks or waggons being covered or uncovered with surprising ease and facility, so that one porter can uncover two trucks in the space of a minute, and two can re-cover both in the same time. It allows of a small portion, or the whole area of the truck, being uncovered, and affords great facility for loading and unloading, and protecting the goods in these operations, as well as in the course of transit. It can be secured by locks and keys, thus rendering merchandise secure from plunder. It is cheap in its construction, can be applied to railway trucks and waggons generally, and is easily attached or detached. It runs smoothly through the air at high speeds, and against head winds.

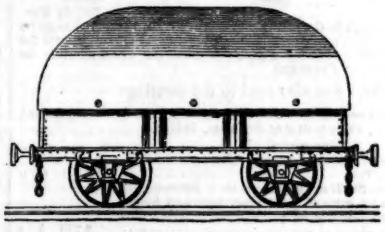
This Tilt has been in use on different parts of the broad guage during the winter, and has been found to work remarkably well in the severest weather. Experienced and practical persons, who have the management of large goods' stations, and have seen these tilts in working, and who know the great wear and tear of cloths, tarpauling, &c., and the inconvenience of existing modes for goods' covering, are of opinion that these Tilts will be of great utility in railway service. The patentee is himself prepared either to construct or, on moderate terms, to license parties to construct his patent Tilts.

Applications to be addressed to R. Brotherhood, Railway-Works, Chippenham, Wilts.



No. 1.

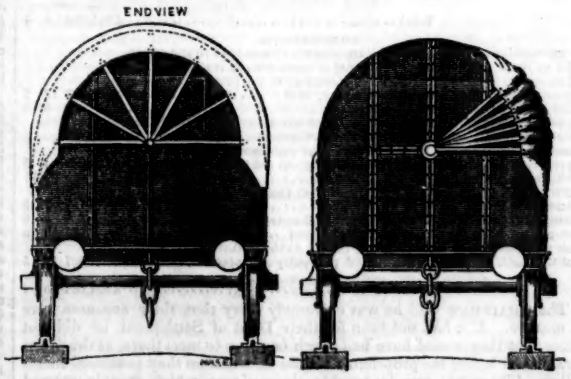
This shows the side elevation of a waggon, with the tilt closed and fastened down.



No. 2.

This shows the tilt as applied to a box, waggon, or long-sided truck, with longitudinal bearers.

END VIEW



No. 3.

This is an end elevation of the same on a larger scale, showing the pin and fan which supports and carries over the longitudinal bearers to which the cloth is attached, and which when open lies compactly folded along the side of the truck, leaving the whole area of the truck open for receiving or discharging its contents by crane or otherwise.

No. 4.

This is an end elevation of the same, showing the tilt partially closed, so that the whole or any portion of the truck can be open at pleasure, affording means of protection for part of the merchandise, whilst the other is being loaded or unloaded, or the truck may be used entirely uncovered, without the tilt in the least interfering.

The tilt is applied to box, or low-sided trucks, with curved longitudinal bearers.

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

MONDAY .....Mines Royal, and Mineral and Battery Works Company—offices, Twelve.
European Life Assurance Company—offices, at Twelve.
TUESDAY.....Anglo-Mexican Mint Company—offices, at One.
West Middlesex Water-Works Company—offices, at Eleven.
Metropolitan Sewage Manure Company—Willis's Rooms, at Two.
Southwark-bridge Company—offices, at One.
WEDNESDAY ..Linares Mining Association—offices, at Two.
Metropolitan Counties and General Life Assurance Co.—offices, Three.
Metropolitan Life Assurance Company—offices, at Two.
Legal and Commercial Life Assurance Company—offices, at Twelve.
Universal Life Assurance Company—offices, at One.
Etonian and General Life Assurance Company—offices, at Two.
THURSDAY ....Imperial Brazilian Mining Association—London Tavern, at Two.
National Provincial Bank of England—offices, at Twelve.
Great Britain Mutual Life Assurance Company—offices, at One for Two.
West Flanders Railway—offices, at One.
Commercial Gas Company—London Tavern, at Twelve.
SATURDAY ....General Life and Fire Assurance Company—offices, at Twelve,

[*The meetings of Mining Companies are inserted among the Mining Intelligence.*]

THE MEXICAN COMPANY.

The half-yearly meeting of proprietors was held at the offices, Great Winchester-street, on Thursday, the 2d inst.

JOHN OLIVER HANSON, Esq., having taken the chair said, before proceeding to the business of the day, he would read a letter he received from their chairman (Mr. Mitchell, M.P.), whom he hoped to have seen present at the meeting. In consequence of his absence, he was unexpectedly obliged to take the chair. The letter was read, and stated that the chairman's absence arose unavoidably from a lawsuit, in which he was required at Westminster Hall, but he hoped to be present amongst them before the business of the meeting was concluded.

Mr. MAUDE (the secretary) then read the following

DIRECTORS' REPORT.

The letter from Mr. Fenochio, the company's agent at Yavesia, dated the 5th of Feb.,—transmitting the accounts of the negociacion for the past year, which embrace all the operations of the company, in Mexico, for that year—containing, as it does, a complete review of these operations, and his view of the past state and future prospects of the negociacion, the directors are of opinion that they cannot do better than adopt this document as the basis of their report to be now submitted to the proprietors. Accordingly, the letter will now be read, and adopted by the directors as an integral part of this report, accompanied with such remarks as arise out of the perusal of it, the principal one being the result of last year's operations in Mexico, which, it will be remarked, as well by reference to the letter as by the profit and loss account which accompanied it, and which will now be submitted to the meeting, is wound up by a balance of $222 1¼ in favour of the year's operations, or, at 4s. per dollar, equal to 48*l.* 8s. sterling. As, however, this includes a remittance of 500*l.* to cover the London charges of that year, the result of the operations of the year, in so far as Mexico is concerned, may be considered favourable, especially when contrasted with those of the previous year, which, as reported to the last general meeting of proprietors, left a loss of 634*l.* 7s. 3d. The great drawbacks on last year's operations, as the proprietors will have remarked on perusal of Mr. Fenochio's letter, arises from a number of the miners having deserted our district, in order to betake themselves to the working of a gold mine at Las Peras, a short distance from Yavesia. This, it is to be hoped, will soon be remedied, by the return of the miners to our district; in fact, by a letter from Mr. Fenochio dated 5th March, received by the last mail, this operation had already commenced, as the following extract from said letter will prove:—"Although we have had another unsatisfactory month, I am much pleased in being able to state that several of our miners have returned to the district, as was anticipated; and I have no doubt many more will come back before the end of the month, most of them having discovered that they are able to earn as much, if not more, in this district than at Las Peras, where the payments to the workmen are not so regular and punctual as with the company. I hope, therefore, that after the Easter holidays, which are close at hand, I shall have it in my power to render better accounts of our operations." In fact, nothing was wanting but a large supply of good ore to enable him to follow up these operations to great advantage, as will be seen by his letter of 5th Feb., in which he states that "he possesses stores for all necessary purposes of mining, has the means to purchase ores without being in debt, and a good will to confront the difficulties of his position, in upholding the interests of the company." The directors now submit the balance-sheet of the Oaxaca ledger for the past year, the balance of which transferred to stock account amounts to $118,687 2½; or, at 4s. per dollar, to 23,737*l.* 9s. 3d. They likewise submit, in conformity with the Deed of Constitution, the balance-sheet of the company's accounts here, from its commencement to 31st of December last, examined and attested by the auditors; and have to report that Thomas Alexander Mitchell, Esq., M.P., and Thomas Wilson, Esq., two of the directors, and Thomas Starling Benson, Esq., one of the auditors, are in turn, by settled rotation, to go out of office; but, being eligible, now offer themselves for re-election to the offices of directors and auditor respectively.

Mr. MAUDE then read the following letter from Mr. Fenochio:—

Yavesia, Feb. 5.—My last respects to the directors were dated 4th January, since when the secretary's favour of the 1st December has come safely to hand, by which I note with pleasure the board were in possession of my October despatches, with the bill for 500*l.* on Messrs. Jones Loyd and Co., bankers. I now beg your attention to the enclosed accounts of the negociacion, consisting of inventories of the company's stores under my charge, amounting to $29,332 1½; also profit and loss account and balance-sheet for 1849, showing a small profit on the operations of that year of $222 1¼, after covering the expenses of the company in England, and all outlays. From these documents, and others remitted monthly, the directors will observe that the quantity of ore purchased in 1849 was 2883 cargas, at a prime cost of $10,905, which rendered a net profit of $8319 6¼, or $2 4¼ per carga. The Natividad Mine, so productive in former years, barely covered expenses in 1849; the ore extracted being poor, barely averaging 3 ozs. per quintal. Ixtipixi has also been backward, showing a loss of $428 7¼. This, however, may eventually prove only a temporary advance, as the money has principally been invested in the level which should lead to the vein of Jesus Maria, and which I trust will hereafter compensate the outlay. As regards the mineral of Alta Gracia, Iotolapa district, it was my intention to have made another effort to form an establishment in that interesting quarter, with a view of increasing our weekly receipts of ore; but I found I could not do so without taking the buscones from their work here, and the idea was abandoned. It is necessary to state that we have been deficient of hands, more or less, during the whole year, in consequence of the bonanza of the gold mines of Las Peras, at which place it is computed that no less than 300 barreteros of our district are employed. Many of them will, doubtless, return in April, to look after their small patches of ground sown with maize; but in the meantime I see no remedy but to make the most I can of those remaining in the Sierra. All this is very annoying, as the results of the past year have again proved that the district is not exhausted, and that with sufficient hands to work the mines there is ore worth extraction. I must, therefore, persevere in my endeavours to prevent more of our barreteros quitting us for Las Peras, and trust that a few months of active work will counterbalance our actual want of ore. It must not be anticipated that we are to be unfortunate throughout the year. I possess stores for all necessary purposes of mining. I have the means to purchase ore without being in debt, and a good will to confront the difficulties of my position in upholding the interests of the company. Finally, my advice to the directors and proprietors is, not to despair under present adverse circumstances. We are not the only sufferers in the district; and if matters come to the worst, it is evident that the parties working in it cannot all subsist by mining, when some will have to retire. Whether the company is to be the first to suspend operations will be seen in the sequel.

The following ore forms C No. 1 of this year:—				
51 quintals ore, of 1849, at 3½ ounces }				
15 „ „ 10 „ }		.....*Mks.*	42	5½
403 „ purchases of ore, at 3 ounces			151	1
10 „ Sta Gertrudis Mine, at 10 ounces			12	4
479 quintals.			206	2½ *Mks.*

Owing to unavoidable repairs, both in the stamp-work and barrels, there has been no production of silver in January. The machinery is, however, all again in order, and the reduction of ore has commenced this week. I hereby enclose the usual monthly accounts of the negociacion.—PASQUAL FENOCHIO.

The following balance-sheet was also read to the meeting:—

Statement of Receipts and Disbursements of the Mexican Company, from the commencement, in March, 1825, to 31st of December, 1849.

RECEIPTS.

To capital—for the amount received for deposits and calls, from the commencement to 31st December, 1849	£392,410	0	0
Profit and loss—viz.: Balance on the 31st December, 1849, consisting of dividends, interest, and profit on sales of Exchequer Bills and Stock, on the Indemnity Fund account, discount for prompt payment for stores supplied, and other items	2,274	5	4
Total	£394,684	5	4

DISBURSEMENTS.

By commissioners in Mexico.—For the amount transmitted to and drawn for by them, from the commencement of operations in 1825, to the 31st December, 1849, as per statement, submitted to the proprietors at the annual general meeting, on the 3d May, 1849	£361,333	13	6
Addition thereto in 1849	50	0	0
General Expences.—For the amount disbursed under this head, for salaries, rent and taxes, law charges, advertisements, &c., from the commencement to 31st December, 1849, as per statement submitted to the proprietors at the annual general meeting, on the 3d May, 1849	31,638	4	5
Addition thereto in 1849	462	10	11
Fixtures and furniture in the office, valued at (including recent repairs, under the lease)	155	7	3
Trustees Indemnity Fund.—For a 500*l.* Exchequer Bill on hand (at par)	500	0	0
Stamp Account.—For transfer stamps on hand	16	10	0
Cash on hand on the 31st December, 1849.—At the bankers, 515*l.* 7s. 1d.; at the Bank of England, 11*l.* 8s. 10d.; on petty cash account, 1*l.* 3s. 4d.	527	19	3
Total	£394,684	5	4

The CHAIRMAN said he was extremely sorry that their accounts were so meagre. If it had not been for their Deed of Settlement he did not know that they would have had much occasion to meet there, as the directors placed before the proprietors all the information they possessed themselves. There was one favourable circumstance which it only seemed right for him to allude to, which was, although they had not made much profit in Mexico, they had made a trifling profit, after defraying all expenses in Mexico, and remitting 500*l.* to cover all charges in London for the past year, which was more than adequate for the purpose. That he called a favourable feature of their accounts. Another favourable item of their profit and loss account was the purchasing of ores; of these they had purchased to the extent of $10,905, which they reduced, and so realised a profit of $8319, equal to 83 per cent. If they only got plenty of ore, and found plenty of workpeople to take it out, there was now a prospect of their doing themselves much good. There was also this favourable feature of the discovery of an important adit in the Jesus Maria, about 36 feet distant from the point where Mr. Fenochio calculated on making some richer ore. There were now, therefore, two favourable points which would affect their profit and loss account—namely, the purchasing of ores, and the possibility of meeting with some success in getting richer ores from the discovery now made. (Hear, hear.) They had a balance of cash in hand of 527*l.*, and also 29,332*l.* in stores in Mexico. Their plant was estimated at 79,247*l.*, but this was a very uncertain thing to be realised; yet, if sold to strangers it might realise something. The stores and quicksilver on hand might produce something considerable, but if this company were broken up, he did not see a prospect of realising much for the proprietors. He did not know that he had anything else to say, further than the directors did not mean to send out any more money to Mexico. As long as they could maintain themselves it was very well, and they might possibly meet with something good, and for the general benefit of the proprietors. In conclusion, he would now move the adoption of the report and accounts.

Mr. GODDARD observed that they did not state the quantity of silver actually returned.—Mr. MAUDE replied that the result was easily calculated by referring to the accounts of Mr. Fenochio. He took a sample from the new discovery of ore, which realised about 36 ozs. to the quintal.

Mr. GODDARD said, what he wished to arrive at was, the difference in the price of the silver, if sent over here, instead of being sold in Mexico.

The CHAIRMAN said, their plan was, as soon as the silver was realised at their haciendas, to get the money for it at Oaxaca, which was reckoned a much safer plan than sending it down to Vera Cruz for shipment. Again, if it was to be shipped, Mr. Fenochio would want larger means at his disposal to carry on operations; but could, as soon as the silver was ready, get the money for it on the spot. (Hear, hear.)

Mr. CHANCE was glad to find Mr. Fenochio had such confidence in the result of their future operations.

Mr. MAUDE said, it would be impossible for Mr. Fenochio to get on with the number of men under him without disposing of the silver in the country. (Hear, hear.)

Mr. WHEELER (a director) said, they had gone on so long; and he thought they need not now despair. (Hear.)—The report and accounts were then adopted unanimously.

Mr. Thomas Alexander Mitchell, M.P., and Thomas Wilson, Esq., were re-elected directors of the company.

Mr. WILSON returned thanks, and drew attention to the serious drawback on their operations, from 300 buscones having left the district of the silver mines. If on their return the produce should be only doubled, the profit on the ore would be very considerable. They would require a little extra quicksilver, but the expenses would be the same, although the profits might be much greater. Mr. Fenochio placed much hope of success in his efforts in driving the adit he had mentioned, but all mining operations were so very deceiving, that there could be no dependence placed even in the most favourable indications. At all events, they might say that they were on the right side this year, compared with the result of the last, and he only hoped they would be found to be on a better foundation, and that a much larger profit might be forthcoming at their next meeting.

THOMAS STARLING BENSON, Esq., was then re-elected as auditor.

Mr. WILSON moved a vote of thanks to Mr. Fenochio for his valuable services to the proprietors.

Mr. TERRINGTON (an auditor) seconded the motion, which was passed unanimously.

A vote of thanks was then passed to the chairman and directors for their gratuitous services.

Mr. REES proposed a vote of thanks to Mr. Maude (the secretary), which was seconded by Mr. CHANCE, and passed unanimously.

Mr. MAUDE, in returning thanks, said he hoped to live to see this establishment a flourishing one, though not much could be expected from the limited means at the disposal of Mr. Fenochio. They now started in much more favourable circumstances than any other company so engaged; they owed no one anything, neither was the concern under any liability whatever. Their shares were reduced to 5050, so that if they only got a little of good luck out of this newly-discovered vein, or from the greater quantity of ore obtained from the buscones, the price of their shares must rise exceedingly. (Hear, hear.) He could only more assure them that this mark of respect would be an additional stimulus for him to do what he could to promote their welfare. (Hear, hear.)

After a vote of thanks to the chairman, the meeting separated.

BLAENAVON IRON AND COAL COMPANY.

In last week's Journal we gave the particulars of the proceedings at the annual meeting of proprietors, held on the 26th April; we have since obtained a copy of the directors' report, from which we find that—

The "make" during the year has been—	
Pigs	*Tons* 22,616
Metal	3,031
Bars and rails	9,412

The sales during the year have been—	
Pigs	*Tons* 5,922
Metal	564
Bars and rails	10,733
Coal	16,073
Lime	3,336

And the gross profit arising from these sales has been, on—					
Pigs	£4,762	1	2	Bars and rails	£4803	1	5
Metal	570	14	4	Coal and limestone	1865	9	3

Total	£12,001	6	2
Deducting from this amount, for discount and banker's charges	3,830	13	9
There remains a balance of gross profit at the works of	£8,170	12	5
From which deduct—Interest on mortgage £ 948 12 11			
Ditto on debentures 3757 11 11			
Current expenses 774 19 10 =	5,481	4	1
Leaving a net profit of	£2,689	7	2
To which being added the net profit of 1848	772	5	0
Making	3,461	12	9
And deducting the amount of 1847 to the debit of profit and loss	1,801	9	6
There remains a balance to the credit of profit and loss of	£1,660	3	3

In reference to this statement, the board have satisfaction in remarking upon the large quantity of iron produced at the four furnaces in blast, averaging 122½ tons per week for each furnace during the entire year.

Of the advance of 2*l.* 10s. per share, a 6 per cent. per annum, so strongly recommended by the committee in August, 1848, the directors have received only 879*l.* 10s.; whilst in the improvements at the works 10,083*l.* 10s. 2d. has been expended.

A detailed account of the outlay, with its actual and anticipated results (all tending towards a further saving in the cost of production), is afforded in the annexed report, made to the board by Messrs. T. Hill, R. Wheeley, and P. Jones, who were appointed inspectors:—

Blaenavon, April 17.—We submit the following as our report of the proceedings at the Blaenavon Works in the last year; and we proceed to remark on the different items of outlay for improvement. The first of these is the sum of 972*l.* in addition to 430*l.* in the former year, for new coke ovens, which have been in operation during the greater part of last year. The principal advantage contemplated from this outlay was to enable the company to use soft coal of a good quality, which had been previously left in the ground, because it could not be coked in the open heath. The gives a saving of fully 5d. on the ton of pig made, so far as relates to the extent of coal coked in these ovens.

The next item, of 3115*l.*, is for improvements in the roads, exclusive of the purchase of a locomotive-engine at 82*l.* The object of this outlay was the saving of horses. The improvement has been only partially in operation during the last year; but the result of this and other arrangements is, that the average number of horses employed has been less by 48 than in 1847. If this improvements carried out to the extent proposed, at a further outlay of about 2400*l.*, a further saving of 16 horses may be expected. The next item is for sinking a pit on the sale coal, 243*l.* 2s. 6d., and inclined planes connecting this pit with the road to the sale wharf, 1701*l.* 5s. 1d. The main object of this outlay was to obviate the high cost and deficient supply of sale coal, which for some time past has operated against the profits in this department. When completed, the advantages will appear in the further withdrawal of 12 or 13 brases, as well as the abandonment of long and expensive underground roads, and in the facility of opening a greater extent of coal and mine work. It is also intended to convey the limestone to the furnaces by these inclined planes at a cheaper rate than by the present road. An engine purchased for the new works, and long since paid for, has been removed, and will be applied to the raising of mine and coal from this pit. Another items for 540*l.* expended on a fitting-up shop (including a lathe already in stock). An incomplete and useless outlay has thus been turned to account, and the company is now enabled to have fitters' work done at a cheaper rate, and to make many things for us which previously were purchased. The only other item carried to outlay account is 7*l.* for a shoeing shop, by which a saving of three smiths is effected, and the work done with greater convenience. The total amount of these items carried to outlay account is 96*l.* (exclusive of the outlay of 430*l.* in 1848). Their progress has, from unavoidable causes, been slow; but they have caused a decided benefit on the produce of last year. We may consider it a subject of congratulation that the cost of the iron has been greatly reduced. This has been effected by attention to general economy in the management, as well as by a reduction of wages, evidenced by the balance-sheet for last year, during which time the selling price of bar-iron has been low.

THAMES TUNNEL COMPANY

The number of passengers who passed through the Tunnel in the week ending April 27 was—No. of passengers, 16,671.—Amount of money, £69 9s. 3d.

Original Correspondence.

CWM ERFIN MINE.

SIR,—I was rather surprised to see it stated by "A Shareholder" in your last publication, that "it is an acknowledged principle in well-regulated mines that one-third of the process ought to be profit." I have spent a rather long life in connection with mines, and was not aware, until now, that such a principle was an acknowledged one. Notwithstanding the confidence with which this statement has been made, I think it right to caution those who have had little experience in mining affairs not to be too easily led to believe that mining profits are governed by this principle. Will "A Shareholder" just take a retrospective view of the mines he has himself managed, and say how many of them will bear this test? Although "A Shareholder" has not thought proper to attach his name to his letter, few will fail to perceive that he is the manager and ex-manager of several of the mines in Cardiganshire; I, therefore, consider that statement, coming from such a quarter, ought, for the sake of the public, who are apt to be deceived by it, to be refuted, or by reference to facts, be proved. I can, from my own personal knowledge, state that many "well-regulated" and well-managed mines occasionally give little or no profit for several consecutive years, whilst other mines give large profits—some one-half, or even two-thirds, the proceeds—although managed by persons of very limited mining experience. Surely this "acknowledged principle" must be scouted by every experienced and intelligent miner, for where the profits depend, as they do, upon many circumstances over which the manager has no control, it is perfectly ridiculous to lay down such a rule on "principle." Will "A Shareholder" apply this principle equally to the Great Consols and the Great Wheal Maria, or the United Mines and East Wheal Rose, or even to either of these mines, at different times? The thing is absurd, and I fear I am taking up too much of your space in exposing it. It is evident, however, that "A Shareholder" lays down his principle, with the view of disparaging, by anticipation, the management of the Cwm Erfin Mines by Mr. Taylor, against whom he clearly has an inveterate animosity; when, however, he states that Mr. Tayler had actually refused a proffered reduction of royalty from the lord of the Cefn Cumbrwyno Mine, his assertion is so superlatively ridiculous, that any statements coming from the same pen will only pass for what they are worth; in fact, the absurdity of such statements carry their own refutation with them, I, therefore, trust Mr. Taylor will not condescend to notice them in any way.

April 30. W.

ON THE SILVER MINES OF CORNWALL.

SIR,—It is with pleasure I look over your interesting columns, and observe the features of our home mining presenting so buoyant an appearance. Mining speculations, from their long standing and steady returns, are known not to be mere bubbles of the day, which cause capitalists to engage in them in preference to foreign mining or railway speculations; and I would ask, Mr. Editor, if you, and all well-wishers to mining, would not be doing their duty when endeavouring to keep mining speculations in their present healthy state by holding these *go a-head men in check*, fearing they may carry it to railway pitch by bringing adventures before the public for their own individual gain, that will not give one chance in a hundred to the persons who venture their capital? You, and most other men, must be aware that, if mining is carried to such a pitch, a panic must and will come. I blame no one for bringing any fair speculation before the public, and am aware they cannot be all *prizes*; but care should be taken to select mines producing such metals as had been known to be the most paying in the district, and due attention should also be paid to the stratification, as to the ores they would produce; the chances would then be in the adventurer's favour.

For gold, the rage is to California, but for silver it is nearer home; and we are told that it may be found in almost any district in Devon or Cornwall, and more particularly about Callington. Hints were thrown out, a few weeks since, that one real Mexican lode had, by a subterraneous passage, succeeded in crossing the Atlantic; but our stratum appeared to be so uncongenial to the growth of this refined lode as to cause it to wither and die, and we hear no more about it. I fear, however, that this will be too often the case.

I am not an advocate for working silver mines where it is not blended strongly with lead ore, and ask those who advocate the working of what they term "silver mines" to point out one in Cornwall or Devon that ever paid expenses from the commencement to its abandonment, with the exception of Herland; and I am not sure that did. I think there can be no difficulty in pointing out a hundred mines which have been worked for silver in these counties. Admitting one has paid, there is then only one chance in a hundred of getting a paying mine.

I happened to first discover the silver in Wheal Duchy, near Callington, about 40 years since, and took out 1000*l.* worth the first week; a large portion of it native silver. Messrs. Fox, Williams, and Co., opened this, and most of the other silver lodes in the district, having nearly all the surface bunches; and I am quite sure they left the field minus of many thousands. These mines have all been worked ever since by different parties, sharing no better fate; and, if we compare these with *tin, copper, lead, antimony*, or even *iron*, I ask if the chances are not ten to one against the silver mines where the silver is not combined with large portions of lead?

I am only surprised that some of these men have not found a *California* nearer home, and brought out a gold-washing prospectus for the sea-shore at Perranzabuloe, or Ladock streams and South Molton lodes, or some other of these places, where gold, equally as good as the gold of California, has been found.—N. ENNOR: *April* 29.

ON THE LEAD MINES OF CARDIGANSHIRE.

SIR,—Having twice visited Wales within the last three months, and minutely examined the leading features of about a dozen of the mines at the surface and below, as to the nature of the lodes and stratification, I found them, at first sight, to present quite a contrast to a man accustomed to the more compact lead lodes of Cornwall and Devon. These lodes resemble Drake Walls and a few of our coarse *expanded tin lodes*. The lead is disseminated in the lineal and angular joints, often ranging from 10 to 30 ft. wide, and but seldom make in leaders. Most men unaccustomed to such lodes would be almost ready to pronounce them worthless, until they went into a calculation, as to what the ground could be spent for, and the quantity of lead produced per cubic fathom, with the comparatively small cost of machinery for water drainage, as but few of these mines produce large influxes of water, and the superior advantages they have for adits and water-power for crushing machines, and other dressing apparatus, which is carried out in many of the mines on the most simple and economical plans I have yet met with. When I see their large monthly returns, and have their information as to the number of years many of these mines have unceasingly been worked, and the immense fortunes made by many of the former proprietors, I must admit it to be a district completely mineralised; to corroborate which I have only to add that it is thought that every third mine now at work is a paying one, and many of them largely so; and I unhesitatingly say that I think there is no place in the British dominions where mines can be opened with so small an outlay, and such a certainty of success, under the present high prices, as the lead mines of Cardiganshire; and I think every practical man who visits this district, after looking at its highly mineralised strata, and the number of lodes crossing it in such a favourable direction, and all its other local advantages, not forgetting to notice the grandest feature—the quantity of ore returned monthly—he will at once admit the chances are two to one in favour of those who venture in these mines against any others he has ever seen.—N. ENNOR: *April* 30,

CORNISH STEAM-ENGINES.

[Abstract from Browne's *Cornish Engine Reporter*, from March 20 to April 20.]

PUMPING-ENGINES.

Number reported	29
Average load per square inch on the piston, in lbs.	13·2
Average number of strokes per minute	5·5
Gallons of water drawn per minute	5881
Average duty of 19 engines—being million lbs. lifted 1 foot high, by the consumption of 1 cwt. of coals	66·4
Actual horse-power employed per minute	1157·9
Average consumption of coals per horse-power per hour, in lbs.	4·2

ROTARY-ENGINES—WHIMS.

Number reported	20
Number of kibbles drawn	89,349
Average depth of drawing, in fathoms	131·3
Average number of horse-whim kibbles drawn the average depth, by consuming 1 cwt. of coals	54·7
Average duty of 12 engines, as above	21·4

STAMPS.

Number reported	7
Average number of strokes per minute	13·5
Average duty of 6 engines, as above	39·2
Actual horse-power employed per minute	173·0

PUMPING-ENGINES DOING HIGHEST DUTY.

Fowey Consols	80-inch single	*Millions* 103·9
Par Consols	80-inch single	100·6
Great Polgooth	80-inch single	84·7
North Pool	50-inch single	77·2
West Fowey Consols	60-inch single	76·8
Stray Park	60-inch single	74·0
Trelawny	50-inch single	72·3
Callington	50-inch single	68·8

WHIM-ENGINES.

Fowey Consols	22-inch double	*Millions* 34·9
ditto	22-inch double	31·3
Great Polgooth	22-inch double	29·4
Par Consols	24 & 13-inch Sims's combined	28·4
Devon Great Consols	30 and 16-inch Sims's combined	21·6
Great Polgooth	22-inch double	20·5

STAMPING-ENGINES.

Great Polgooth	35-inch double	*Millions* 53·5
Lewis	52 and 28-inch Sim's combined	45·5
Tamar	30-inch single	44·1

Mining Correspondence.

BRITISH MINES.

ALFRED CONSOLS.—The lode in the 70 fm. level, east of Field's engine-shaft, is still its usual size, and the ore course on the north part is about 3 ft. wide—worth from 40*l.* to 50*l.* per fm. We hope this level will drain the water from the winze that has been sunk 3 fms. under the 60 fm. level, east of the said shaft, are up to this time engaged taking down the south part of the lode, where it is from 6 to 8 ft. wide, and worth from 50*l.* to 60*l.* per fm.: we intend to put six men to stope in the ore immediately, to prove its value, and resume the driving of the level east. The lode in the 50 fm. level, east of the engine-shaft, has a better appearance than for some time past. There is no change in any other part of our untwork operations since the last report. We expect the shaftmen will be ready for sinking in about a fortnight from this time.

BARRISTOWN.—The lode in the 80 fm. level end east, on the east and west lode, is about 1 ft. wide, with good stones of lead through it, and looking better; in the stope behind this end, in the bottom of the level, the lode is looking well and regular—producing about 15 cwts. of lead per fm.; in this winze, which is now about 7 fms. under the level, the lode is still improving—producing full 15 cwts. of lead per fm.; the lode has been very good for the last 4 fms. in this winze. In the stope in the back, over this level, the lode is small—producing about 4 cwts. of lead per fm.; he new lode end west is poor. The men driving north, in the 30 fm. end west, on the east and west lode, have no change. The cross-cut in the 40 fm. level is south of Slob shaft about 9 fms., and I expect we shall cut the new lode during the ensuing week in the 40 fm. level, and the east and west lode in a short time after, if the present favourable ground in the cross-cut should continue with us. In the 26 fm. level end the lode is about 1 ft. wide, with a good mixture of lead through it; when the 40 fm. level cross-cut is communicated with the winze sinking on the east and west lode, I consider from 15 to 20 tons of lead per month should be raised, with our present prospects; but until that is done, the quantity of lead raised must unavoidably be small.

BEDFORD UNITED.—We continue to drive north in the 103 fm. level, and expect to cut the lode in about 8 ft. In Andrew's winze, in this level, the lode is 2½ ft. wide, producing saving work. There has been no lode taken down in the 90 and 70 fm. levels east. The lode in Bray's winze, in the 90 fm. level, is still worth 30*l.* per fm. We weighed at Morwelham, on Friday last, February ores, 120 tons 7 cwts. 2 qrs., and sampled March ores, computed 119 tons 3 cwts., good quality ore.

BRYN-ARIAN.—The lode in the engine-shaft is 6 ft. wide, with several small branches of ore. The 10 fm. level east is much as last reported, a large lode mixed with ore, but coarse in quality; the rise in the back of the same level west is in a large lode, but rather disordered at present, with little ore. The shaft sinking on Pensarn lode is still poor, and is down within 2 fms. of the deep adit level. The stope under the deep adit level, east of the shaft, continues much the same, yielding about 15 cwts. of ore per fm.; the stope under the adit level, west from the shaft, is looking well, yielding 1½ ton of ore per fathom.

CARTHEW CONSOLS.—At the upper mine, in about 10 days from this, I expect the engine-shaft will be sunk to the 75 fathom level, the ground in which is very good, and the lode generally improving as we get down, from which we have been getting very fine stones of lead in the past week. We have not been driving the 65 fathom level north of late, but have been rising in the back of it, to communicate with the 55 for ventilation, and for the purpose of proving the ground, which I am pleased to say shows well; I am yet more strongly buoyed up in my expectations in the 65 fathom level end south, and am fully persuaded that we are entering into a very important run of lead ground, for in every foot of lode we take down we find the lode improving, and in the present end it looks well, and may be termed a good lode. We have not yet intersected the lode in the cross-cut in the 18 fm. level south. I find no particular change in the tribute. At the lower mine, up to this time, I find no change of importance; the ground is improved, but the lode continues much as it has been for some time past.

COPPER BOTTOM.—The mine continues to improve. We have a good lode in the 20 fm. level north, producing nearly 3 tons of ore per fm. We have also, for the first time, got good stones of ore in the 40 fm. level west, on the south lode, improving daily; we have had a change of ground in this level for several fathoms driving, with favourable indications, but no mineral until this week; this is rather an interesting spot, as we are approaching the first deposit of ore. We have also intersected the mundic lode in the 40 end east; here we have a very large lode, without yet seeing the north end. Capt. Richards says there is every thing he should like to see but ore. Our appearances for the present week have very much improved. Capt. Richards says the mine is now looking better than he ever saw it before, and that with a little perseverance we shall do well.

DEVON AND COURTENAY.—Since my last report we have raised the collar of the shaft and removed the whim. I have put a pare of men to clear the 40 fm. level east of the engine-shaft, preparatory to the commencing of a rise on the cross-course from the 50 to the 40 fathom levels, which will ventilate and throw open the lode. The ground in the engine-shaft is not so favourable for sinking—not that the ground is harder, but is turning more on its edge. The ground in the 40 fm. level west is more easy for driving, and more watery, which is a favourable indication, but no other change has taken place. The lode in the 50 end east has improved a little since my last—worth now about 1 ton of ore per fm., and leaving tribute ground. The tributes in the back of the 40 west have got up in the gossan, and still have ore, but it is not so regular as it was. The other pitches are without alteration.

EAST CROWNDALE.—The lode in middle shaft is still poor, and in a disordered state. In Harris's shaft the lode is also poor. In the 28 fm. level end the lode is kindly: we have set a pitch in the back and bottom of this level, at 6*s.* in 1*l.* We have set seven pitches, at an average tribute of 9*s.* 2½*d.* in 1*l.* We intend stamping at our usual time, but cannot state the exact quantity, as the ores are not yet all at surface.

EAST TAMAR CONSOLS.—The engine-shaft is down 10 fms. under the 80 fm. level; we purpose sinking 1 fm. more, and then commence driving; in the 80 fm. level south the lode is 3 ft. wide, yielding saving work; it is easy for driving, and very kindly, but not rich. In the 70 fm. level south the lode is large, composed of spar and capel, and almost unproductive; in the same level, north of the shaft, we have had a good productive lode during the greater part of the month; in the present end the ground is hard, and, judging from the level above, we have to expect it will continue to be so for about 3 fms. In the 60 fm. level, the lode in the south end is still in a disordered state—sometimes yielding very good work, and at others being nearly profitless; in the north end, in this level, the lode is worth 8 cwts. of lead per fm.; and the driving this month has left excellent tribute ground. In the 26 fm. level, north of Church-lane shaft, the lode is worth 8 cwts. of lead per fathom, and likely to continue. We are sinking Caroline's shaft by six men; the ground is very favourable, and the lode highly promising; the price for sinking is 90*s.* per fathom. The pitches are yielding a full average quantity of ore. We have set the 41 men at an average tribute of 10*s.* 9*d.* in 1*l.* The steam-engine at Gullett's was tried on Saturday, and works perfectly well.

ESGAIR LLEE.—Our pay and setting was on Saturday last, the 27th April, and the following is an account of the latter:—The deep adit west of the junction, on the caunter lode, to carry all the lode, or 4 ft. wide, by six men, 4 fms. stent, or the month, at 5*l.* 5*s.* per fm. The 12 fm. level, east from surface, on the caunter lode, to carry all the lode, or 4 ft. wide, by six men, 4 fms. stent, or the month, at 5*l.* per fm. A winze to sink below the 12 fm. level, east from surface, on the caunter lode, to carry it 7 feet long by 4 ft. wide, by six men, 4 fms stent, or the month, at 6*l.* per fm.; the stopes in the bottom of the shallow adit, west of Morgan's winze, to carry all the lode, by six men, 8 fms. stent, or the month, at 2*l.* 15*s.* per fm. The caunter lode in the deep adit, west of the junction, is from 4 to 5 ft. wide, and has a promising appearance, and is producing some saving work; the caunter lode in the 12 fm. level, east from surface, is still looking very promising, being 5 or 6 ft. wide, and will, on an average, yield from 20 to 30 cwts. of ore per fm.; the same lode in the winze, a few fathoms behind the end, is 8 ft. wide, and has a promising appearance, and will, on an average, yield from 20 to 30 cwts. of ore per fm. The caunter lode in the stopes, in the bottom of the shallow adit, west of Morgan's winze, is looking very kindly, and will yield, on an average, 10 to 12 cwts. of ore per fm. The masons, in another day, will finish building the wheel-pit, and we have the wheel axle ready to put on.

EXMOOR WHEAL ELIZA.—Since the meeting, held at Plymouth in February last, the resolutions then passed have been strictly attended to—viz.: the engine-wheel raised, breast launders put in, to give the wheel more water, the sweep-rods altered, the flat-rods and connections altered, together with the tye-bucket rods changed. The capstan and shears are now in course of erection, and we hope that in a few weeks all will be completed; when finished, the engine-wheel and its connections will be of sufficient power and strength to put the shaft down to the 40—the engine drawing 15-in. lifts, and going nine strokes per minute if required. The cross-cut south has been driven by four men about 6 ft.—many branches composed of white iron, spar, and spotted with copper ore, of excellent quality, have been met with crossing the end, nearly at a right angle, and varying in size from 4 to 10 in. Judging from the underlay of the lode in the 12 fm. level, we may expect to cut it within the next 6 ft., and, from appearances, it is not unlikely we may then meet with ore. The end on the north lode has been driven by two men about 6 ft. on the caunter going north of east, to form a junction with the main lode left standing to the north 3 fms. further west, as stated in the last report; the branch is about 1 ft. 6 in. wide, composed of solid mundic; and, from present appearances, when this branch forms a junction with the main lode, and gets through the mundic, a course of ore may be expected. I would recommend this beautiful lode being laid open so far east as the slide, being about 20 fms. Four men are now cutting the plat, putting in the penthouse, and doing the necessary work previous to sinking the engine-shaft. When the pitwork is completed, I hope this shaft will be sunk without further delay, as it will lay open one of the best lodes I ever saw; and I expect that shortly we shall meet with, under this gossan of the middle lode, a good course of copper ore, and that at no distant date this mine will realise all the expectations which have been entertained of her.

GARRAS.—The ground in the bottom of the engine-shaft is changed, having elvan occasionally mixed with a light grey killas, and is more difficult to break, but still fair ground. The lode in the 63 fm. level north has increased to 5 ft. wide, and there is an immense quantity of water coming from the end, which has a most promising appearance, although not yielding much ore at present. All the other parts of the mine are much the same as when last reported on. We have sampled about 15 tons of lead—namely, 10 tons of best quality, and 5 tons stamps lead.

GREAT ROUGH TOR CONSOLS.—The sett is extensive, in which two lodes have been opened on at the surface, at the foot of a granite hill, with a strata of killas, or slate, to the north; the south lode runs nearly east and west, inclining about 2 ft. in 6 ft. towards the north; the lode is from 25 to 30 ft. wide, and presents some very favourable symptoms for making ore in depth; the other lode is about 30 or 70 fms. to the north; it is a caunter running north of east, a much smaller lode, and has not so kindly an appearance. To work these lodes, Thomas's shaft has been sunk between them, and a 40-in. cylinder engine erected thereon; the shaft is sunk to a 30 fm. level; and at this point a cross-cut has been driven south, and the large lode cut and driven through; it retains its size, is composed of hard spar iron, with small spots of ore, &c. On account of the great quantity of water, this part of the mine is now suspended. The appearance of the stuff broken by driving through the lode, and to be seen at the surface, holds out no encouragement to resume the operations; at 220 fms. west of this shaft, Morris's shaft has been sunk by means of a flat-rod from the engine; and in the 30 fm. level the large lode has again been cut and driven on east 60 fms.; for 8 or 10 fms. east of the shaft the lode was promising; it was driven afterwards 34 fms. in granite, and the remainder in killas; the lode retains its size, but is very poor, and at present not driving. The 30 fm. level is also driven 15 fms. west, for the first 8 fms. a kindly lode, since poor—not driving; the shaft is sunk to a 45 fm. level on the north part of the lode, and thence extended east about 12 fms., where the lode is cut into the south, and driven from thence east 7 fms.; the lode is promising, producing occasionally stones of ore; the lode in the east is hard, driving by six men, at 15*l.* per fm. The shaft is sinking under the 45 fm. level by 12 men, at 27*l.* per fm.; it is down about 5½ fms.; the principal part of the lode is standing to the south of the shaft; and, where broken into, has been found to produce stones of grey ore; this holds out encouragement to prove the lode at greater depth. The caunter lode was cut at Morris's shaft just under the 30 fm. level—lode, poor; to prove it, the 45 fm. level was driven north 36 fms., where the lode appears to be in branches, and has a very unfavourable appearance the last 18 fms.; the cross-cut has been in the killas, where there has been no lode, or branch, cut worthy of notice. Taking the mine generally, the prospects are poor, and hold out no great encouragement at the present depth; but finding a little ore by driving the 45 fm. level east, and also meeting with stones of ore by sinking the shaft below it, I think it rather desirable to prove the lode at a greater depth—it being in an untried part of the country, where mining is scarcely known. This strata, or channel, of ground in which the lodes are found, would in the western mining districts be considered interesting and very favourable for mining operations—the lode being of an immense size. Should it prove productive, it would soon remunerate the adventurers for the money already expended. Having every ne cessary erections and buildings complete on the mine, the money now required will be, expended in exploring and opening the ground, in sinking shafts, driving levels, &c.

HEIGNSTON DOWN CONSOLS.—The lode in the 35 fm. level, east of the cross-cut, is much the same as when last reported on. The middle cross-cut, towards the south lode, is also without alteration. The cross-cut south of the winze, in the 45 fm. level, is impregnated with yellow copper ore throughout the capels of the lode, which are not yet cut through. The 45 fm. level, east of the said winze, produces a little saving work for copper ore.

HENNOCK.—The engine-shaft is down 10 fms.; the ground much the same as last reported. I took the men yesterday from raising gossan, and put them to drive east, to cut that part of the lode gone under the bob-pit. I fancy we shall have from 3 to 4 fms. to drive. I also put the men to cut through the lode at the south whim-shaft.

HOLMBUSH.—The lode in the 132 fm. level, west of the diagonal shaft, is still disordered by small cross-courses. The lode in the 120 fm. level south is 6 ft. wide, composed of quartz and lead—opening ground that will set at a moderate tribute; the ground in the 120 fm. level cross-cut south, towards the flap-jack lode, is hard at present, being white capels, in which is found large stones of lead. The flap-jack lode, in the 100 fm. level, east of the great cross-course, is 2 ft. wide, producing 1 ton of copper ore per fm. The pitches in the back of the level are much the same as last reported on. Our parcel of copper ores weighed, on Friday last, 127 tons 15 cwts.

KESWICK.—The 10 fathom rise, at Brandley, is rather better than last reported. In the 20 fm. level north there is a great improvement both in the ore and in the ground; the other parts of the mine are much the same as last report. At Thornethwaite, in the 17 fm. sump, on string, the ore continues poor, but we shall commence sinking next week: the bottom level continues favourable.

KIRKCUDBRIGHTSHIRE.—In Stewart's shaft the lode is 6 ft. wide, with a good stone of ore coming in on the south side. The 62 end, west of Stewart's, and the 62 end, east of Keith's, which are driving towards each other, are still unproductive; we expect to hole these two ends this month, which will then unwater Keith's shaft to this depth; the lode in the 62 end, west of Keith's, is very kindly, making about 6 cwts. of lead to the fm. The lode in the 50 end, west of Keith's shaft, is still unproductive, although very kindly for lead. We expect a vessel to take another cargo from us next week.

LAMHEROOE WHEAL MARIA.—We have completed the lift at Davey's, forked the water, and the men will proceed to their respective places this day. At the engine-shaft, the lode in the 60 end east still holds good, and shall send you samples for assay; in the meantime, will also get some tested in this part, and forward you its value. —[Assays of the ore from the tin lode, respecting the value of which some difference of opinion exists, and different results having been obtained, are being made by various experienced assayists; and it is hoped that by these means the real value of this lode will be accurately ascertained before the ore is submitted to the process of dressing.]

PENZANCE CONSOLS.—Our prospects, at present, are more favourable than they have ever been; we have a good course of tin, and the north lode is 4 ft. wide, worth 25*l.* per fm., and is still improving going down; and Carthew's lode is much improved going west in the 18 fm. level, where it is 2 ft. wide, worth 22*l.* 10*s.* per fm. We have also discovered a good lode in Carthew's shaft, in going down 3 fms. under the 18 fm. level, 3 ft. wide, worth 24*l.* per fm. William Boyn's pitch, in the 18 fm. level, going east at Carthew's shaft, is much the same as last reported, as also Thomas Harney's pitch. I do expect, from present appearances, that we shall soon cut the north cross-cut, for I much approve of the stratum of ground. Thomas Grose has 9 ft. to drive to cut the lode; so that when we cut the lodes in the cross-cuts, and sink the shaft 7 fms. deeper than the present bottom, I think the shares will be worth 10*l.* each in two or three months hence.

ROCHE ROCK TIN MINE.—I have had the pleasure of seeing in the *Mining Journal*, these three weeks past, reports on the Roche Rock Mine; and being a native of St. Austell, and having worked in the eastern part of this sett for several years as a pitman, I feel it my duty to confirm these reports from my experience, having had from day to day to witness the appearance of the different lodes contained in this sett. I have on several occasions stated, and I am ready to acknowledge at any time, that I am fully persuaded there is no place, or mine, worked on in Cornwall for tin I would so fully recommend as a good speculation to any mining company as this mine. There is contained in this sett six known lodes—all of which I have seen opened; one of which is the north lode, being 6 feet through, and carrying a very good leader of tin; the middle lode is 2 feet through, and very productive for tin; the south lode is of equal size to the last-mentioned, and good in quality; those lodes are all further north than the three lodes now opened by Mr. Knight and friends, who are working on the south part of this sett. From these lodes I have seen produced upwards of 400 of tin per 100 sacks. The indications are such as will warrant the laying out a small capital.

SPEARNE CONSOLS.—We have begun to sink the engine-shaft under the 128 fm. level, and are glad to say we have a good lode of tin in the shaft 12 in. wide, and a good lode of tin in the two bottom ends, east and west from engine-shaft. In the 116 fm. level, east and west of engine-shaft, we have a good lode of tin for 32 fms. in length, and still there is a rich lode in each end. In the 90 fm. level, east and west, we have also a have a good mine, now looking better for the last four years. good branch of tin. The 60, 50, and 40 fm. levels, are looking well. On the whole we

SOUTH TAMAR CONSOLS.—The shaft is sunk 10 fms. under the 100 fm. level; the lode in the bottom of it commences to carry a very good leader of lead; we purpose sinking for this month and then commence driving. The 100 fm. level has been extended north 5 fms. 3 ft. during the last month; the lode is about 2½ ft. wide, nearly perpendicular, and very promising; it is worth from 5 to 6 cwts. of rich ore per fm.; the same level south has been extended 11 fms. 2 ft. during the past month. The lode has, on an average, produced 12 cwts. of rich ore per fm.; in the present end it is 3 ft. wide, very regular, easy for driving, and worth from 12 to 14 cwts. of ore per fm., with every prospect of its continuing to be equally productive and very profitable. The 90 fathom level has been extended south 5 fms. 1 ft.; the lode at present is small, and disordered by a slide; the ground, however, is easy for driving, and we may expect very shortly that the lode will become more productive. The 80 fm. level has been extended south 1 fm. 4 ft. 6 in.; the lode has been small and hard, but is now getting larger and more easy for driving. The 70 fm. level south has been extended 4 fms. 2 ft. 6 in.; the lode is composed principally of capel, with numerous small strings of rich ore. The 45 fm. level south is cleared home to the end; we find this drivage was by the side of the lode, and we have cut into it, and find it to be composed of capel, carrying good branches of rich ore for silver, and will yield very profitable work. In the 30 fm. level the lode continues to be 4 ft. wide—all good stamps work, with some branches 3 or 4 in. wide of very rich ore; the end is easy for driving, and has been extended 4 fms. 4 ft. 6 in. during the past month. Glynn's shaft has been cleared down to, and a communication effected with, the 70 fm. level, whereby the whole of the levels are better ventilated, and the mine rendered more cool throughout. The pitches are yielding a fair average quantity of ore.

SOUTH WALES MINES.—Our pay and setting was on Saturday last, the 27th of April, and the following is an account of the latter:—The 12 fm. level, east of the cross-cut, on the south, or Frongoch, lode, by four men, 5 fms. stent, or the month, at 3*l.* 10*s.* per fm.; the lode is 12 ft. wide, composed principally of gossan, quartz, and slate, with a little copper, and producing a little lead, but not sufficient to set a value on. The shaft to sink below the surface, about 100 fms. east of the old workings, to carry it 7 ft. long by 4 ft. wide, by four men, 5 fms. stent, or the month, at 3*l.* 10*s.* per fm.; the lode has a promising appearance, being 4 ft. wide, and composed principally of quartz and gossan, and producing good stones of lead, and will, on an average, yield about 2 cwts. of ore per fathom.

SOUTH WHEAL TRELAWNY.—The ground in the engine-shaft, sinking below the 50 fm. level, is favourable, and of the same character as heretofore—sunk 5 fms. 1 ft. below the level; the ground is also favourable in the 50 fm. level cross-cut, west of the shaft, where we expect to intersect the lode in the course of next month: the eastern cross-cut, in the same level, is suspended for the present, and the men set to open on the branch, north and south, that we cut some little time since in order to prove it.

TREGEAR CONSOLS (St. Kew).—We have been costeaning by the adjoining hedge to Wheal Sarah sett, and have cut the lode; it produces a very rich gossan, mixed with white lead, and I have no doubt in sinking we shall get a good bunch of lead; and I think we can get down to the 9 fathom level without water, as the adjoining mine, Wheal Sarah, will take away all the water, being 30 fms. deep. Wheal Sarah cut rich at the 9 fm. level, and I see no reason we should not do the same. I shall send you some of the gossan next week so that you may get it assayed, as, from its appearance, I have no doubt but you will find it rich for silver: I am saving all of it. There have been many agents here to see the lode, who all agree in its being very promising.

TRELAWNY.—At Phillips's shaft, in the 82 fm. level north, the lode is 3 ft. wide, worth 9*l.* per fm; in the 82 south the lode is 2½ ft. wide, worth 2*l.* per fm. In the 72 south the lode is 2½ ft. wide, worth 3*l.* per fm. In the 62 north the lode is 3 ft. wide, worth 10*l.* per fm. Trelawny's shaft is down 9½ fms. below the 82 fm. level. In the 82 north the lode is 3 ft. wide, worth 7*l.* per fm.; in the 82 south the lode is 3½ ft. wide, worth 12*l.* per fm. In the 72 north the lode is 3½ ft. wide, worth 9*l.* per fm. At the north mine, in the 50, south of Smith's shaft, the lode is 2 ft. wide, worth 5*l.* per fm. In the 40, north of ditto, the lode is 2 ft wide, worth 6*l.* per fm. The stopes throughout the mine are much the same. We sampled on Wednesday last two parcels of ore—No. 1 crop, computed 100 tons; No. 2, common ditto, 40 tons.

TRELEIGH CONSOLS.—In the 100 fm. level, west of Garden's shaft, the lode is 1 ft. wide, not much ore. In the 90 fm. level, west of ditto, the lode is 15 inches wide, with stones of ore. In the 80 fm. level, west of ditto, the lode is 1 foot wide, with stones of ore. In the 70 fm. level, west of ditto, the lode is 4 ft. wide, worth 10*l.* per fm. In the winze sinking below the 60 fm. level the lode is 2 feet wide, with good stones of ore. The engine-shaft on Wheal Parem lode is sinking below the 40 fathom level in the country. The 40 cross-cut, south of ditto, is driving towards the middle lode. In the 40 fm. level, east of ditto, the lode is 18 in. wide, with stones of ore; in the winze sinking below the 40 fm. level the lode is 2 ft. wide, worth 2*l.* per fm. On the middle lode, the adit, east of Nicholson's shaft, is setten tribute.

WEST WHEAL JEWEL.—In the 85 fm. level, west of Williams's cross-course, on Wheal Jewel lode, lode not taken down in the past week. In the 70 fm. level, west of ditto, on the same lode, the lode, when last taken down, was worth 6*l.* per fm.; in the winze, in the 70 fm. level, west of ditto, on the same lode, lode worth 4*l.* per fm. In the 57 fm. level, west of ditto, on the same lode, lode producing stones of ore.; in the shallow adit, west of Tregoning's shaft on Tolcarne tin lode, lode worth 5*l.* per fm.; in the deep adit level, west of Tregoning's shaft, on Tolcarne tin lode, lode unproductive. In the 12 fm. level, west of ditto, on the same lode, lode unproductive; in the stopes west of Pryor's winze, in the back of the 12 fm. level, on the same lode, lode worth 28*l.* per fm.; in the stopes in the bottom of the 12 fm. level, east of Tregoning's shaft, on the same lode, lode worth 22*l.* per fm.; in the stopes west of Tregoning's winze, in the bottom of the same level, on the same lode, lode worth 25*l.* per fathom. These stopes are working on tribute.

WHEAL GOLDEN CONSOLS.—At the engine-shaft, in the 60 fm. level, we have cleared out an old sink about 4 ft. deep, which we find is at the commencement of the course of ore gone down. Our end in the 70 fm. level is now about 15 ft. behind this sink, and as the ore dips north I estimate we shall have a few fathoms more to drive before we reach the orey ground. The ground in the end is improving, and there is more ore in it than I have before seen. In the pitch in the back of the 70 south we have discovered a fresh vein of lead 5 in. thick; as we only cut it this evening, I can say but little of it. It looks promising, and in a few days, after we have opened on it, I hope to be able to send you a favourable report of it. The tribute pitches, and other parts of the mine continue as last reported.

WHEAL PENHALE.—A general improvement is noticed here. In the engine-shaft the ground is improved, but we have not taken down any lode in the present sink (which is now down between 3 and 4 fms. below the 30 fm. level), consequent on its having taken too perpendicular a direction for us to follow for the present, but no doubt it will shortly come out again in the shaft. We have not until yesterday (April 26) for some considerable time taken down any lode in the north end of the 30 fm. level, which in so doing we find better than at any place before in this level, but at this point I am not yet able to define the size of it. Good work for lead has been getting during the week from this level south. The lode in the winze, in the bottom of the 20 fathom level north, continues very good, but in the south end of the 10 fm. level the lode is much disordered by a slide. The tribute pitches, generally, are much improved.

WHEAL SARAH.—Capt. John Webb was here on Tuesday, and we decided about the wheel to work the crusher, that it was best to have a new one altogether, and not to tear abroad the stamps-wheel, but let it stand as it is; there will only be the new wheel different to what I informed you before, and it will be for your advantage. The carpenters are getting the frame-work as fast as possible. The ends are looking poor at present, but not without ore. We have two stopes working in the back of the 20 fathom level, looking very well; these stopes are worked by six men—four in one and two in the other—and they are raising more gossan than we can get women to buck. I shall send you a sample or two next week that we have bucked, and to other places, according to appointment, and after that we can sell to the best advantage. We have a great deal more ore to grass, but we cannot send it to market without being bucked or crushed. I have taken some samples to-day, and shall send two to you and two to the Hammer Smelting-Works, and two to Callington, and request the value at per ton for lead and silver from each as quick as possible, and then I shall know where to sell to the best advantage for your profit. I shall number the two samples that I send. We have, I suppose, about 6 tons of No. 1, and about 4 tons of No. 2. I see no difference in the ends, or stopes from what I wrote you last.

WHEAL TREMAYNE.—At Laurie's shaft, in the 30 fm. level west, the lode is still large, much as last reported. At Madron's shaft, in the 60 fm. level west, the lode is worth 7*l.* per fm.; in the 60 fm. level east, the lode is worth 3*l.* per fm. In the 70 fm. level west the lode is 10 in. wide, opening tribute ground; in the 70 fm. level east the lode is 15 in. wide, worth 3*l.* per fm. In the rise in the back of this level the lode is much as in the east; in the 70 west, on a south branch, the lode is 5 inches wide, poor. At Thomas's shaft, in the 50 fm. level west, the lode is small and unproductive. At Painter's shaft, in the 30 fm. level west, the lode is 2 ft. wide, composed of white peach, prian, and gossan; there has been a considerable falling off in the ore raising from the stopes in the back of this level, and a rise has been risen 5 fathoms without any improvement. At new shaft, the 53 fm. level east, on Allen's branch, is worth 6*l.* per fm.; the 53 fm. level west, on ditto, is worth 5*l.* per fm. Allen's shaft, in the 53 fm. level east, on Allen's branch, is worth 7*l.* per fm.; the 53 west, on ditto, is worth 8*l.* per fm.; the 53 east, on a side branch, is suspended until the boundary shaft shall be completed to this level; the 30 fm. level east, on a side branch, is worth 8*l.* per fm.; the boundary shaft is nearly completed to the 45 fm. level, and between the 45 and 53 fm. levels it is progressing favourably. The engine is on the mine, and we have commenced putting it in the house. The flat rods have been set to work at Wheal Margaret, and we expect to have the water out to the 50 fm. level in two or three days. Our tribute department is much as for some time past

WHEAL VINCENT.—The shaft, sinking on the course of the lode, is down within 2 fms. of the back of the level, from which we are breaking some moderate work; the last 3 ft. we broke some splendid stones of tin embedded in the gossan, but being so near the surface, we cannot expect great results; the water has been in this last week, and there is no chance of its being in fork until our new lift is down, which we shall get down with all speed. Mr. Hopkins has been at Five-lanes, and took with him some of the stones of tin broken; the last hole that was blasted in the eastern end the water began to rise, and we have not seen the end since; the men informed me that there are large rocks of tin equally as good as those Mr. Hopkins took with him. I was underground that morning, and the lode appeared to be much improved, all of 4 ft. wide; the gossan holds down about 3 feet from the back of the end, with stones of tin embedded in it; the remaining part, towards the bottom of the level, is just the same as that Mr. Hopkins took with him; all we want is power, to get deeper, as there is every chance of the mine doing well—the tin must be of an excellent quality in depth. Notwithstanding wolfram, mixed with tin in a gossan in the back, or to a shallow depth, is seldom or ever known to fail from making rich in depth; I beg further to state, that no miner ever saw a more promising lode.

WHEAL VENTON.—Since my last communication to you we have been part of the time exploring the southern part of the sett; but immediately as we got down through the diluvian deposit, and had a glimpse of the lode in the fixed rock, the water came on us so fast that we were obliged to suspend operations there for a day or two, until we had got home some more timber to secure and keep abroad the pit; meanwhile we commenced working in the northern part of the sett, where we soon opened the lode without difficulty, proving it here to be about 6 ft. wide, similar in character to what I have before described. We yesterday resumed operations in the south part, and I hope, in a day or two, to effectually open it here also—showing by that time a regular unbroken line of lode the entire length of the sett, and stratum very congenial for lead throughout.

FOREIGN MINES.

IMPERIAL BRAZILIAN MINING ASSOCIATION.

Bananal, Feb. 23.—I hope you are pleased with the progress made here. Gibson's shaft is now 7½ fms. below the 14 fm. level, but has not drained Thomas's, although the former is some fathoms below the bottom of the latter, and only 3 fathoms longitudinally from it. We have now 2½ fms. more to sink to reach the next intended level, which, together with 3 ft. for a fork, or reservoir for the water, make it 3 fms., and will probably occupy from two to 3 months. We shall then commence driving on the different veins; but previous to this, I hope to be able to work in the bottom of Thomas's shaft, on the vein there, and have great hopes of finding something satisfactory. When this work is completed, and the 24 fm. level extending on the different veins, I consider the mine will then be in a fair course of prosecution. With regard to our proceedings here, I have very little to add to my last respects, with the exception of our having commenced stoping the bottom of the 14 fm. level, on the Big Pump vein; a few boxes of coarse work for the washing-house have been obtained from it, which produced 4 ozs. 5 dwts. of gold. The vein, however is of a promising nature, showing symptoms of improvement. Our works are progressing regularly. We have lately been obliged to re-timber several fms. of the top of Gibson's shaft, the old timber being rotten, and the shaft in great danger of crushing together: this has been completed in a very strong and substantial way, and will now secure to our machinery near the mouth of it a firm foundation. Ere I have the pleasure of addressing you again, I hope to commence sinking Gibbes's shaft under the 14 fm. level; the new horse-whim on it has been completed, and we shall very soon be in a position to draw nearly all the stuff in the mine through the shaft, and to supersede the hauling at Thomas's, which is tedious and expensive.

Gongo.—I have great pleasure in announcing to you a good produce from here, during the last 10 days—7 lbs. 9 ozs. 13 dwts.; 3 lbs. 4 ozs. 11 dwts. of which was obtained from the Great Western stamps; the stuff supplied was from Bray's shaft burrow, which is to the west of the stamps; this is very encouraging, and I feel very glad that I arrived here in time to save this machine from being taken to pieces. Our works generally are going on regular and well. The Messrs. Tregoning will find the regos in good repair—in fact, much better than they have been for many years past; and when James Clark's contract is completed, and the large Cata Preta axle fitted to Joinville's wheel, we shall have 82 stamp heads in working condition.

Gold Report—Gongo, from 14th to 22d Feb., 7 lbs. 9 ozs. 13 dwts.; Bananal, ditto 2 lbs. 0 ozs. 10 dwts.=9 lbs. 10 ozs. 3 dwts.

Total amount from the 1st January, viz.:—From Gongo, 20 lbs. 1 oz. 8 dwts.; Bananal, 47 lbs. 9 ozs. 4 dwts.=67 lbs. 10 ozs. 12 dwts.

LINARES MINES.—The following has been received from Mr. H. Thomas:

Linares, April 29.—Annexed you will find the account of ore weighed-in from the floors this week, as well as of our first loading for Seville of 310 arrobas. Oxen carts are now here to take 7 or 8 tons, and more will promptly arrive. I am much pleased to report this, and next week we shall have to show a better account of ore weighed-in, the women employed in bucking having been engaged in reducing the ore weighed-in from the tributers, now nearly completed. We have fixed another jigging hutch, and shall get on faster in returning our smalls. We expect that in San Gaspar winze the water is now down to the back of the level. We have been in the third level further eastward, and examined much of the old workings in the back, which are of great extent, with numerous arches of good lead standing. To these the lode appears to be of a produce varying from 2 and 3 to 5 and 6 tons per fathom, and has very much improved to what it is in the second level immediately above. The gossan still accompanies the lode as far as the third level, and its general character is extremely favourable. The water still being in the level, together with the stuff, we could not see the end, nor much other workings, before us. We are perfectly satisfied, however, that so far from there being any diminution of the prospects in the lower part of the mine eastward, there is, on the contrary, considerable improvement, which we hope to verify further when we see the workings under the third level. The lode in Wilson's shaft, sinking under the 31 fm. level, still continues good; we have sunk now 6 ft. on this course of ore, and the produce has been between 10 and 11 tons for the length of the shaft (10 feet), or from 6 to 7 tons per current fathom. Our tribute pitches are altogether looking well—Faul's, in the western part of the mine, producing 6 to 7 tons per fm. from a large lode.

Lead ore weighed into store this week	650 arrobas.
Ditto loaded for Seville	310 ,,
Total in store	6101 arrobas.

NATIONAL BRAZILIAN MINING ASSOCIATION.

Cocaes, February 22.—The usual number of hands are still employed in excavating westerly at Hamilton's lower stope, where favourable indications of an improvement are still observed; but the ground has become a little harder than when last reported, and the layer seems to be contracting, which renders the extraction of the ore more difficult. In Hartley's western stope there has been nothing done since the last report; but as soon as a thoroughfare is made through Hamilton's stope to this place, which will, in all probability, be done during the ensuing ten days, operations may be continued. The Terra Cahida Mine is now become a point of great interest, not so much on account of the improvement in the samples, as from a recent examination and measurement, in which it has been discovered that the direction of the veins in this quarter is, in all probability, considerably more towards the south than has hitherto been supposed.

Cocaes produce, from 15th to 23d February ..... *Mks.*	5	4	3	35
Culaba produce, from 17th to 26th February	1	6	6	17
Total	7	3	1	52

THE AUSTRALIAN MINING COMPANY.—We have been favoured with the following communication, which has been addressed to Major Norman Campbell:

North End, Reedy Creek, Dec. 26.—Since I wrote you last, I have been able to see a little more of Reedy Creek estate. I am now quite delighted with the property for its numerous fine springs of water: there are two springs on the plain, nearly opposite the intended well, which was dug for the township, and another a little further, opposite what is called the Half-way Bush, going from the south end to the north end. I am of opinion that these springs could be made to supply the present township. This is the situation for the public house, being on the high mail road, with plenty of water, &c. As for springs of fine water, after I pass my house, in the North Creek and Branch Gullies I encountered upwards of twenty, nine of which I opened, principally on the top of the hills, which were not running before I opened them. I also observed some fine table land, or bottoms, which would make dairy and sheep farms, &c., and vineyards combined. I may say there is one fine bottom partly established and occupied by Messrs. Rogers and Grey, with six or seven springs of water; and there are other places which would make fine situations for dairy and sheep farms, &c., one in particular, generally known as the Basin, where I think there are upwards of 20 acres of fine rich soil, easy of cultivation, with the creek running through it, and a fine spring of water which I opened on the top of the hill: this is in sight of the mail road, on entering the line of the estate on the north side. This is the place which Mr. Harrison, the shepherd, wishes to rent. The hills are scanty of wood, and what is growing at present is gum whattle and scrubby she oak. The hills are steep and rocky in places, principally granite, but there is some

fine land on their sides in places, which can be cultivated as vineyards, &c., and other parts planted with fruit and useful trees. I have met with some hills of so barren, stony, rocky, and gravelly a soil, as to be only fit to grow birch. There is a fair sprinkle of gum trees, &c., between the north and south end, in the creek and branches, which is convenient and serviceable for fire-wood for the steam-engine, and easy of conveyance. I am of opinion, that were the springs properly opened, and the sink holes stopped, there would be a fine rivulet through the plain of the property constantly running, and fine situations for tanks for irrigation, the springs being in many instances so high on the hills. You were mentioning to me that you wished some of the high mountains and gullies shown; as it would require an artist for that purpose, I propose that it would be the quickest, cheapest, and most correct representation to employ Mr. Norwood Potter, the Dagnerreotypist, who has taken the residence of Mr. Dutton, on East Terrace.

P.S. I am of opinion that the fine white freestone I mentioned in my first letter from here is the magnesian limestone, but am not a sufficient judge to decide. I have met with iron ore, and plenty of mica, in running the North Creek and branches. I have seen no copper ore as yet.

ABERGWESSIN SILVER-LEAD MINING COMPANY.

An adjourned meeting of shareholders was held at Gregory's Hotel, Cheapside, on Thursday last, the 1st of May.

GEORGE PELL, Esq., in the chair.

Mr. SPILLER (the secretary) read the following report to the meeting:—

The directors, in accordance with the wishes of the shareholders, have had the mines and property of the company inspected by Messrs. Ennor and Hopkins, whose reports will be laid before the meeting. The directors have not hitherto been able to proceed with the operations of the mine, in consequence of several of the shareholders having declined to pay up the calls, because the deeds relating to the property had not been deposited with the company, in pursuance of the resolutions of the company. That difficulty being now obviated, the several shareholders promise to pay up their calls forthwith. The accounts will be all prepared, drawn out in detail, and forwarded to each shareholder within the next fortnight.

Upon the motion of Mr. VAUGHAN, the report was adopted and entered on the minutes.

The CHAIRMAN explained why so many calls remained unpaid, but that everything having been now satisfactorily settled, he had every hopes that all arrears would be paid up, and the mines prosecuted vigorously.

Mr. SPILLER (the secretary) read very lengthened reports on the mines, from Mr. Evan Hopkins, Capt. Ennor, and Mr. Dean, all of which were satisfactory, and recommended the prosecution of the works.

A long desultory conversation ensued, about the original constitution of the company, from which it appeared that great irregularities had occurred in the transfer of shares, &c. It ended, however, by the appointment of two additional members to the committee, all of whom pledged themselves to devote their energies to the interests of the company.

After a vote of thanks to the chairman, the meeting separated.

[An angry feeling at first seemed to pervade amongst some of the proprietors, which, upon explanation, gave way to the general desire of co operating for their mutual benefit.]

CRADDOCK MOOR MINING COMPANY.

At the two-monthly meeting of adventurers, held at Liskeard, on the 26th April, the accounts for Jan. and Feb. were examined and passed, showing—Call, 105*l.* 10s.; balance last account, 94*l.* 18s. 4d. = 200*l.* 8s. 4d.—Labour cost, &c., 73*l.* 6s. 11d.; materials, 26*l.* 3s. 2d.: leaving balance in favour of adventurers, 100*l.* 18s. 3d.—A call of 10s. per share was made, and the following report, from Capt. H. Taylor, was read to the meeting:—

Since our last meeting, we have cut Dunstan's lode in the shaft; it is about 3 ft. big, composed of spar, peach, and yellow copper ore; it is now about two-thirds through the shaft, and will be out of it altogether in sinking 6 ft. deeper, or perhaps less. The shaft is now about 15 fms. deep, and when this lode is passed through it, we hope to have better ground for sinking. We have likewise brought down the horse-whim, and fixed it to draw from the shaft: in consequence of this, we hope to sink with greater speed, as three of the men have been most of their time drawing the tackle.

GONAMENA MINING COMPANY.

At the two-monthly meeting of adventurers, held at Liskeard, on the 26th April, the accounts for January and February were examined and passed, showing—Copper ores sold, 288*l.* 12s. 11d.; balance last account, 26*l.* 19s. 4d. =315*l.* 12s. 3d.—Labour cost, &c., 118*l.* 17s. 7d.; materials, 8*l.* 12s. 1d.; lord's dues, 18*l.* 5s. 1d.: leaving balance in favour of adventurers, 174*l.* 17s. 6d.

The following report, from Capt. John Buzza, was read to the meeting:—

The 17 fm. level, on Taylor's lode, is small and poor. In the 38 fm. level, on Taylor's, the men have been rising in the back, to meet a winze sinking from the 17, in order to have air to work; they have holed this winze, and we hope to be driving the level again in a short time. In the 60 fm. level, on Gilpin's, the lode is 15 in. wide, producing ½ ton per fm.; we are sinking a winze in the bottom of this level, producing 2 tons of ore per fm. The lode in the 80 fm. level, east on Gilpin's, is small and poor; driving west, in the same level, the lode is 8 in. wide, with good stones of ore. We expect to have 30 tons of ore for sale before next meeting.

HAWKMOOR MINING COMPANY.

At a meeting of adventurers, held at the mine, on Tuesday, the 30th April, the following report was presented:—

The engine-shaft is 11 fms. 3 ft. under the 20 fm. level, at which point we intend extending a level east and west on the course of the lode; the lode generally, since leaving the 20 fm. level, has been productive, yielding, in some places, ore to the value of 30*l.* per fathom, and at others good saving work; for the last 2 or 3 fms. sinking it has been worth, on an average, 3 tons of ore per fm.; in the end of the shaft the lode is 2 ft. wide, carrying a leader of copper ore, 12 in. wide, and worth about 10*l.* per fm.; the lode in the 20 fm. level east is very promising, and at present worth 18*l.* per fm.; this end has very much improved in the last few days; in this level west the lode is 2 ft. wide, producing good saving work, and is altogether as kindly a lode as I have ever seen. We commenced winzes in each of these levels, and sunk about 9 ft.; the lode proved productive, yielding in the western winze 4 tons of ore per fm., and in the eastern winze 2 tons of ore per fathom; the lode carries a leader of tin of excellent quality on the footwall; the latter mineral we have not been able to make available from want of stamping power; the quantity broken is, therefore, reserved until sufficient should be raised to render such erections desirable; these winzes were sunk with a view to prove the ore passed through in driving to be holding down; and I am proud to say my anticipations in this respect were fully realised. A pitch in the back of the 20 fm. level has yielded some good work for tin, which is now dressing, and will be returned in about a month. I cannot state the quantity, as it has yet to go through the process of calcining; there is a pitch working in the back of the 20 fm. level west, which is producing some good ore. I hope, before long, to be able to advise you of the possession of a mine which will make no further demands on you, but enable you to divide profits, which, from present appearances, I have no hesitation in saying it is likely to do. We have sampled and sold, since the last meeting, ores which have realised 293*l.* 11s. 5d., and shall sample to-morrow about 30 tons of good quality ore.

The report was unanimously adopted; and several shareholders expressed themselves as much pleased with the prospects of the mine.

WEST CARADON MINING COMPANY.

At a meeting of adventurers held at Liskeard, on the 26th April, the accounts for Jan. and Feb. were passed, showing—Ores sold (less dues, 355*l.* 2s. 6d.), including carriage paid by purchasers, 5294*l.* 13s. 5d.; materials sold, 35*l.* 16s. 7d. =5330*l.* 10s.—Labour cost, 3097*l.* 4s. 6d.; parochial rates, 29*l.* 4s. 6d.; doctor and club, 50*l.* 14s. 3d.; materials, merchants' bills, &c., 900*l.* 14s.; sundries, 109*l.* 8s. 1d.: leaving balance in favour, 1143*l.* 4s. 8d.; to which add balance last account (deducting dividend paid March last, 640*l.*), 1022*l.* 4s. 9d., shows total balance in favour of mine, 2165*l.* 9s. 5d.—A dividend of 2*l.* 10s. per share was declared.

WEST WHEAL PROVIDENCE MINING COMPANY.

The quarterly meeting of adventurers was held at the account-house, on Wednesday, the 24th of April, when the statement of accounts was presented, showing balance of 575*l.* 18s. 10d. in favour of adventurers.—A dividend of 1*l.* per share was declared, and 63*l.* 18s. 10d. carried to credit of next account.

The following report, from Capt. R. Polglase, was read to the meeting:—

Since our last meeting, we have sunk Michell's shaft 7½ fms. under the 55 fm. level; the lode is worth 10*l.* per fm., and extended east of this level 6 fms., worth 14*l.* per fm., and west 7 fms., worth 12*l.* per fm. We have sunk a winze under the 55 fathom level, 6 fms. east of Michell's shaft, worth 25*l.* per fm.; and have driven on the south lode, in this level, 7 fms. through good tin ground, but the present end is poor; on the north lode we have driven 14 fms. through tribute ground, and driven a cross-cut south 4 fms., cut a lode, and extended east and west on it 9 fms. through moderate tribute ground; we have working in the back of this level five pitches—seven men at 4s., four men at 8s., and six men at 10s. in 1*l.* The engine-shaft will be completed to Wheal Tremayne, in the 45 fm. level, in about a fortnight; we have nine men sinking under the 45 fm. level on a lode worth 25*l.* per fm. We have driven in the 40 fm. level, west of the western cross-cut, 10 fms., worth 4*l.* per fm.; and we have four pitches in the back of this level—two men at 10s., four men at 11s., and six men at 12s. in 1*l.* In consequence of the fall of the price of tin, the cost of engine erections, pitwork, &c., I cannot see my way clear to produce more than a dividend of 10s. per 1-512th share next account.

WHEAL MARY EMMA MINING COMPANY.

At an adjourned meeting of adventurers, held at the Bedford Hotel, Tavistock, on the 23d April—J. DIAMOND, Esq., in the chair—the purser's accounts for the three months, ending the 28th February last, were produced, showing—Balance at last meeting, 20*l.* 9s. 6d.; call made January 3 (2s. 6d. per share), 128*l.*=148*l.* 9s. 6d.—December cost, 61*l.* 16s. 10d.; January, 38*l.* 4s.; Feb., 47*l.* 15s. 4d.—leaving balance in favour of adventurers on 1st April, 13s. 4d.—The accounts having been examined were passed, and a call of 2s. 6d. per share made.—The following report, from Capt. S. Paull, was read to the meeting:—

April 23.—The deep adit level, on the course of the lode, has been extended about 8 ft. west of the shaft, commenced below the shallow adit level; this level, for upwards of 20 fms. driving, has shown good tin ground, and a lode, the general appearance of which is altogether favourable to the opinion that a large deposit of tin is here discovered; the lode varies in size from 1 to 3 ft. wide, and is composed of capel, spar, peach, and tin. A rise is commenced in the back of the level against the shaft mentioned above, and I am happy to state in a good bunch of tin; the lode is 2½ ft. wide, and composed of capel, spar, and tin, and is altogether of a most kindly description, and warrants the opinion that this bunch of tin reaches to the bottom of the old men's work. The 40-feet wheel, with eight heads of stamps attached, is now in the course of getting ready for work, and we hope to see it completed and working on the 1st of May. I am glad to state that the mine presents a most cheering appearance; and in proof of the value of the produce of the concern, a small parcel of tin ore sent to the smelting-house this day, and but only imperfectly dressed for the want of the requisite machinery, has fetched 38*l.* per ton.

BALLESWIDDEN.—At a meeting of adventurers, held at the mine, on Tuesday, the 30th of April, the accounts for Jan. and Feb. were presented, showing—Tin sold, 421*l.* 15s. 11d.; sundries, 163*l.* 12s. 7d. = 4381*l.* 8s. 6d.—Wages, 242*l.* 3s. 11d.; coals, carriage, merchants' bills and dues, 130*l.* 8s. 2d.—A dividend was declared of 7s. 6d. per share, leaving balance to profit and loss account, 41*l.* 16s. 5d., and in favour of mine of 650*l.* 16s. 5d.

SPEARNE CONSOLS.—At a meeting of adventurers, held at Balleswidden, on Tuesday, the 30th April, the accounts for Jan. and Feb. were presented, showing—Balance in favour at last account, 250*l.* 12s. 5d.; tin sold, 826*l.* 11s. 6d. = 1077*l.* 3s. 11d.—Labour cost, 545*l.* 11s. 11d.; coals, 68*l.* 7s. 6d.; merchants' bills, 163*l.* 14s. 11d.; sundries, 9s. 9d. = 778*l.* 4s.—A dividend of 1*l.* per share was declared, leaving balance in favour of adventurers, 170*l.* 19s. 10d.

WHEAL REETH.—At a meeting of adventurers, held this week, the accounts for Jan. and Feb. were presented, showing—Tin, &c., sold, 2768*l.*; costs, merchants' bills, &c., 1642*l.*—A dividend of 5*l.* per share was declared, leaving balance to credit of mine, 526*l.* The prospects are encouraging.—*Penzance Jour*

UNITED MEXICAN MINING COMPANY.

The shares in this company have of late attracted much attention, and their value became considerably enhanced; but suddenly a material depreciation took place, which naturally caused enquiry, and the following article, which has appeared in the *Times*, shows the true position of the concern:—

The sudden fall in the value of United Mexican Mine shares has naturally created many rumours as to its present position. The following facts are, therefore, furnished for the information of the shareholders:—The accounts received by the last packet are quite as satisfactory as the preceding ones, and the fact of quicksilver being required by the manager, ought rather to be viewed as favourable to the operations of the company, because the workings cannot be carried on successfully without it, and the accounts have already shown it is a source of considerable profit, amounting in nine years to upwards of $86,000. It should also be borne in mind that the new mines recently contracted for are being actively developed entirely out of the profits of the existing workings; in addition to which the manager continues his periodical remittances to this country, the favourable appearance of these new mines showing that it is pretty certain the return will shortly increase, and that another dividend may yet be paid ere long. Hitherto, the dividends have been paid entirely from the old workings, and according to the funds in hand.

All the shares being paid up, no further call can possibly be made upon the proprietors. The following statement of property in Mexico, made up to the latest period, will show the stability of the undertaking, which it is desirable should be known by the proprietors generally:—

Value of stores in different mines and haciendas	$197,790
Cash in hand	50,545
Ores in hand	102,169
Total	$350,504

Besides which, the value of buildings and good debts amount to $603,507; and in addition, the company's claims on the Government of Mexico amount to $846,065, making a total of assets of something above $1,300,000.

NITHSDALE IRON-WORKS.—The "blowing in" of the furnaces at these works after being delayed for some time, awaiting the completion of the Glasgow and Dumfries Railway, came off last week, when the whole of the bank and brook workmen were liberally regaled with good old beer. The works, which comprise three blast-furnaces, with their necessary adjuncts, are upon the most approved plans, and are much admired for the completeness of their arrangements. There is an abundance of coal and limestone in the immediate neighbourhood. The blackband workings are about six miles off, and are connected with the works by a private railway. These minerals, with the exception of limestone, are principally wrought out of pits, which have been sunk by the company. It is much to the credit of all concerned that, since the commencement of the works to the present time, not a single fatal accident has occurred.

FREIDD LLECHWYD LEAD MINE, LLANRWST.—An event of considerable interest and importance to the shareholders took place at this mine on Friday last, when the new hydraulic engine was put in motion. The engine is upon an entirely new principle, nothing as yet having been introduced so complete and comprehensive in its principle; without the aid of steam power, or a waterwheel, it will throw up 200 gallons of water per minute, and at the prodigious depth of from 500 to 1000 yards perpendicular. I am at present precluded from giving you the principle of it, but have no doubt it will be forwarded you before long. This engine will prove a great boon to all mine proprietors, as avoiding the great expense of steam, &c. The inventor is a native of the principality, and he richly deserves all the praise that can be given to a native genius. Both the mine and the engine will, I believe, stand pre-eminently high. The engine was proved in the presence of a large number of spectators, who expressed their great surprise and satisfaction. The miners and labourers were well regaled at the Royal Oak.

WHEAL LONGMAID.—The lode, which is a continuation of that of Wheal Gennys to the north, has been laid open by a cutting brought up in the meadow, from which, on the back in the flookan, fine stones of lead ore have been broken. At the meeting, lately held at Tamerton, a call was made to prosecute the necessary preliminary trials, so as to ascertain where will be the best situation for the engine-shaft, &c., as the appearances and products of the lode, as now seen, fully lead to the expectation that the outlay will not be in vain. Several mine agents of the neighbourhood, as well as others, have visited the spot, and enquiries for shares has been the result.

PENZANCE.—It is always pleasing to Cornishmen to find that the prospects of the labouring miners, as well as the adventurers, are improving; and it is a gratifying fact that such is the case at present in various districts in the county. We learn that in the neighbourhood of St. Just most of the mines are in a very flourishing state, and that shares in many of them have much enhanced in value. We also hear that operations are about to be recommenced in the neighbourhood of Marazion, and that Wheal Rodney, Tregartha Downs, and the south lode of the Marazion Mines are the localities referred to. From Hayle, we are informed of the sett being taken, and the whole of the shares in Wheal Ann, an old copper mine, in the parish of Phillack, by a party of spirited adventurers. A survey was held on the mine a few days ago, when the engine, boiler, and count-houses were set to be built immediately, and to be completed in about 10 weeks. An engine, with an 80-inch cylinder, has already been purchased at Wheal Vor. Wheal Ann has been idle for the last 30 years. It is the general opinion that she will prove productive, and it is the universal desire that the adventurers may be amply remunerated for their outlay. Treloweth Copper Mine, at St. Erth, is about to commence working, after being suspended upwards of 20 years. A 60 inch combined cylinder has been purchased for her at Ting Tang; some men are already employed at the surface, preparatory to the erection of the engine, a substantial engine-house being already on the mine, built upwards of 20 years ago.—*Penzance Gazette.*

MINING OPERATIONS IN WENDRON.—For some years past great gloom has pervaded this locality, in consequence of the dulness of mining operations. It is well known that Wendron is an excellent tin country, and a vast amount of wealth has been raised in the parish. Trumpet Consols was one of the best mines in Cornwall, but in consequence of an expensive law-suit, together with the low price of metals, she was abandoned. Wheal Ann, near this sett, has been working nearly a century, and about ten years ago the plant and machinery, together with the interest in the mine, was purchased from the executors of the late Mr. Thomas Teague, by three individuals who worked it till about two years ago, when, in consequence of their not being able to continue, it was purchased for two housand pounds by a spirited company, who have since laid out nearly ten thousand pounds in laying open the mine, machinery, &c., and, in consequence of the hundreds of persons employed in this concern, the gloom in the neighbourhood has been partly dispelled, and before long, we are informed, the adventurers will be amply rewarded for their outlay; shares are already at a good premium, and the mine is looking exceedingly well. Great credit is due to Mr. Julian, of Helston, for the spirited manner in which he took up this adventure, having held a quarter part from the commencement of the new adventure. Mr. R. R. Michell, of Marazion, to whom the county is so much indebted, is the purser, and holds a very large interest. Wheal Lovell has also been prosecuted with a great deal of energy and spirit. The machinery was purchased by the present company 10 years ago for about 7000*l.*; and since that time the present adventurers have spent many thousands in operations, during which period she produced great riches; but being an expensive mine to work, and the price of metals very low, a heavy bank debt continued to accumulate, till within the last two years, since which she has greatly improved; and, in consequence of the rise in the price of tin, she has wiped off the whole of her bank debt; and at the next account a dividend to the adventurers may be expected. Great praise is due to these adventurers for the employment which they furnished during the late depression to hundreds of poor men, women, and children who must have come on the poor rates for relief. The public will now be glad to learn that Wheal Lovell adventurers are likely to be repaid for so liberally laying out their capital, principally for the purpose of employing the poor of the neighbourhood. Wheal Henry and Wheal Tremenheere have setts, which will also be worked at once. At Wendron Consols, under the management of Capt. Perry, of Wendron, we understand, operations will shortly be commenced. Wheal Ruby and Garlidna Mines, which were worked so many years without a profit to the adventurers, were abandoned two years ago, and the materials sold. These were always believed to be good setts, and now, in consequence of the improved prices of metals, these mines are about to be started again. Wheal Oak has also changed hands, and no doubt will be now worked with spirit; so that, on the whole, his locality has seldom been in a more thriving condition than at present.—*West Briton* of this day.

MINING APPOINTMENTS DURING MAY.

1. No copper ore sampling this week.
2. Ticketing at Camborne—North Roskar, North Pool, and other mines.
3. Pay-day at Carn Brea, South Basset, East Pool, and Tincroft.
4. Pay-day at Par Consols, West Wheal Jewel, Dolcoath, Stray Park, Devon Consols.
5. South Frances account, on the mine Fowey Consols sampling.
6. Devon Consols and other mines sampling.
7. Ticketing at Redruth—Carn Brea, and other mines.
8. North Pool setting day; pay at West Caradon and Gonamena.
9. Pay at Par Consols.

JURISDICTION OF THE STANNARIES' COURT.

In the Bail Court, yesterday, Mr. Justice COLERIDGE delivered judgment in the case Newton *v.* Nancarrow. This was a rule for a writ of prohibition to the Judge of the County Court of Cornwall, to restrain him from proceeding on a plaint issued in the County Court, on the ground that the defendant was a working tinner, and was entitled to the privilege of being sued in the Stannary Court of Cornwall. The action was for the non-payment of a demand for goods sold, and was such a case as the Vice-Warden of the Stannary Court had jurisdiction over. The argument was upon the construction of the 67th and the 141st sections of the 9th and 10th Victoria, c. 96 (the County Court Act). The defendant pleaded his privilege as a working tinner. The 67th section declared—"That no privilege, except as hereinafted excepted, shall be allowed to any person to exempt them from the jurisdiction of any court holden under this Act." The 141st section declared—"That nothing in this Act contained, shall be construed to affect the Courts of the Lord Warden or of the Vice-Warden of the Stannaries of Cornwall, but this provision shall not be deemed to prevent the establishment of any court under this Act with the said Stannaries, or to limit or to affect the jurisdiction of any court so established under this Act."

There were, therefore, three enactments—first, that no privilege should exempt an individual, except as thereinafter excepted, from the jurisdiction of the County Court; secondly, that that must be understood as not to affect the Stannary Court; and, thirdly, that a County Court may be established within the jurisdiction of the Stannary Court; and, if established, its jurisdiction should not be affected. The Court thought that effect might be given to all three enactments. According to the affidavits, a working tinner had the privilege of being sued in the Stannary Court; that was a personal privilege, and if the 67th section stood alone, the Stannary Court would be destroyed, and could not have been pleaded by a defendant to the jurisdiction of the County Court; but there was in the same charter a grant that the Warden might hold pleas. He took it that this was a cognizance of pleas, and a grant for the benefit of the parties. If the previous provision was so constituted as to save for all working tinners a plea of the jurisdiction of the Stannary Court, it was obvious that the jurisdiction of the County Court was seriously affected, if not limited; but that point did not now arise. Reading the two parts of the section together, it was clearly the intention of the Legislature that both the Stannary and County Courts should be in existence together; and this could not be the case, unless the privilege of the working tinner had been taken away. The Stannary Court would still have jurisdiction concurrently, but not exclusively. The County Court would stand the same as the superior court. The County Court would not be affected by the Stannary Court, for it had not exclusive jurisdiction. The plaintiff might always proceed in the superior court at the peril only of a suggestion. Full effect, therefore, would be given to the whole of the provisions, by holding that the County Court had concurrent jurisdiction with the Stannary Court. The rule for a prohibition would therefore, be discharged.

MINING CUSTOMS—"LETTING BARGAINS."

In the Vice-Chancellors' Court, yesterday, in the cause of Harrison *v.* Ames, a motion was made for an injunction to restrain the defendants from raising digging, or procuring lead ore or other mineral from a place called "Pwll," in Flintshire, under these circumstances:—The plaintiffs are a company, called "The Lloe Lead Mine Company," and they employed an agent named Jones to let unexplored pieces of land to speculating miners for the purposes of exploration, which was called "letting a bargain;" and the practice was, according to the success which these speculations met with, to regulate the royalties to be reserved upon leases to be thereafter granted of the land first let as a bargain. In this case Jones, as the company's agent, let a portion of land, extending 30 yards in one direction, and 60 in the other, to the defendants Ames, and also a person named Jones, who were ordinary miners, who, meeting with great success, obtained a lease from Jones for two years at a royalty of 2*l.* per ton. This transaction took place in March, 1849, and in the June following the plaintiffs, having discovered what had taken place, had a meeting, and resolved that the lease was null and void, and gave notice thereof to the defendants, to whom an offer was made to let the land in question upon such terms as Jones was authorised to let, the plaintiffs alleging that in the present case he had proceeded without their knowledge or authority.

The plaintiffs are the lessees of Lord Fielding, and the defendants upon the above proposition being made to them declined it, and negociated with his lordship, who had entertained the question. Under these circumstances the present injunction was moved for, the plaintiffs alleging, as an additional fact, that the defendants had not only continued to work the mine in spite of the notice, but had worked even beyond the limits of the lease granted to them by Jones. Affidavits were read in support of this case, and also on behalf of the defendants, which were to the effect that, according to the custom of the mining districts, Jones was considered to have, and in fact had, sufficient authority to let, bargain, and grant leases, and that even if he had not, the company had clearly recognised the transaction, having themselves dealt with the defendants, and entered it in their books. "Duke of Beaufort *v.* Neald" (12 Clark and Finnis), as to agency, was in point, by which it appeared that a principal was bound by the acts of a general recognised agent.

The VICE-CHANCELLOR said that the case turned upon a short point. The question was whether there had been such a custom as the defendants represented. The way in which they had represented the custom was of a thing which in itself showed there was no custom; it was nothing more than a sort of loose statement of a habit of bargains being made, according to what the parties might agree upon at the time. If that was the case, and if there was not such a custom, the rest of the case was a matter of course. It appeared to his Honour quite absurd to say that an agent could take upon himself, without distinct authority, to bargain away the rights of his principal.

MADRID AND VALENCIA RAILWAY.—Master Blunt (charged by the Court of Chancery with the affairs of this concern) has, under the provisions of the Joint-Stock Companies' Winding-Up Act, issued a peremptory order that every person in whose custody, possession, or power any of the books of account, deeds, instruments, cash, bills, notes, papers, and writings of, or belonging to, this company, may be, do, within four days of the issue of the order, produce and leave with the official manager, Mr. Quilter, all such documents in their possession, custody, or power. This order has been served on Mr. Chadwick, in whose possession all the papers are alleged to be, and on Mr. Rose, his solicitor. It is said that the gentleman in question has, since the last meeting before the Master, when certificates of his illness were sent in, removed, or been removed, from his residence, where his family and carriages still remain; and that some strange efforts have been made by certain parties to buy up all the shares in the concern, for the purpose, it is understood, of defeating the inquiry.

Among the passengers by the *Avon* steamer, from the West Indies, is a negro physician, who visits England to submit to the Government a plan, founded on a scientific experiment, to supersede steam as a propelling power.

ELECTRO-MAGNETISM AS A MOTIVE-POWER.—An important paper on this subject will appear in next week's Journal.

PONTYPOOL.—The British Iron-Works, and Pentwyn and Golynos Works, with the exception of the furnaces, were at a stand on Monday last, in consequence of the notices being up for a reduction of 10 per cent at the British, and 5 per cent. at the Pentwyn and Golynos. The men of the latter works, however, agreed on Tuesday night to go to work on Wednesday morning. The men at the British Works went to work on Monday, under a promise that the drop should not exceed that of other works on the Hills. The poor men see that the masters have no alternative but reduction of wages, in the crushing state of the iron trade. May the day be not far distant when both men and master shall be enabled to live comfortably, and flourish by their labour and anxiety.—*Monmouthshire Merlin* of this morning.

THE STRIKE IN LANARKSHIRE.—The unfortunate differences between the coal and ironmasters of Lanarkshire and their workmen are still unsettled, and, as far as we (*Daily Mail*) can learn, an adjustment is as distant as ever. On Monday last, a large meeting of the miners was held in a field on the Bredisholm estate, in Old Monkland, which was attended by almost the whole of the Northern Union, as it is termed, including, we should suppose, from 1200 to 1800 able-bodied men. The meeting lasted above two hours, and resolutions were passed, to the effect that the men should hold out for the terms demanded from the masters. Such a course is deeply to be deplored. It is most distressing to think how many families are thus thrown out of employment and food. The masters will not yield; and we have reason to believe that many of them will forthwith, for a season at least, cease to take the water from the mines, and thus throw more hands idle. The miners have called a public meeting, in order to make known their version of the origin and nature of the dispute.

THE LIVERPOOL, HOLYHEAD, AND DUBLIN STEAMERS.—The City of Dublin Steam Company commenced their contract for the conveyance of the mails between Kingston and Holyhead on Wednesday last. The vessels employed in the service are the *Eblana*, *Iron Duke*, and *St. Columba*, of the company's boats; the *Llewellen*, which they have purchased from Government, and the *Banshee*, which has been lent to them. In order to keep up the Liverpool trade at the same time, the boat which sails from Kingston at 7 h. 30 m. P.M., will proceed on to Liverpool from Holyhead, after dropping the mails at the latter place. The company are building at London two additional first-class vessels for this service.—*Liverpool Mercury.*

WHEAL MARIA—SUDDEN DEATH.—On Tuesday morning, as a miner, aged 30 years, named Thomas George, working in the 90 fm. level plat, was about to resume his work, after eating a pasty, and had to stoop for a sledge to hand to a pitman, he fell down, and instantly expired. The deceased was single.

Current Prices of Stocks, Shares, & Metals

STOCK EXCHANGE, Saturday morning Eleven o'clock.

Bank Stock, 8 per Cent., 207	Belgian, 4½ per Cent., 86
3 per Cent. Reduced Ann., 94¾ 5	Dutch, 2½ per Cent., 55¾ ¼ ½
3 per Cent. Consols Ann., 95¾ ¾ 6 5¾	Brazilian, 5 per Cent., 86½
3¼ per Cent. Ann., 97 ⅛ 6⅞ 7	Chilian, 6 per Cent., 99
Long Annuities, 8¼ ½	Mexican 5 per Cent., ex Coup., 28¾ ⅝ ½
India Stock, 10½ per Cent., 267 6½	Russian, 4½ per Cent., 95¼ ½
3 per Cent. Con, for 9th May 95¾ 6 5¾ ⅞ ¾	Spanish, 5 per Cent, 17½
Excheq. Bills, 1000*l*., 1½d. 69s 67 pm.	Ditto 3 per Cent., 37

MINES.—The mining share market continues less active than we have noticed it for some time; whilst the mines generally are represented as being in a very flourishing position.

There have been some enquiries for Heignston Downs, and business done at an advance.

In North Buller shares several transactions have taken place, at better prices.

At Hawkmoor, we learn that a very considerable improvement has taken place in the 20 fm. level going east, where they have a lode 2 feet wide, solid ore. Other points of the mine have also improved.

At Botallack Mine an important discovery has been made, in a winze below the 135 going west, where they have a very fine course of copper ore, nearly 2 feet wide.

At Wheal Langford, the silver lode, which was represented lately as being remarkably rich, is not so productive at present.

At the West Wheal Providence quarterly meeting, the statement of accounts showed profit of 509*l*. 4s. 2d., which, added to credit from last account, allowed a dividend of 1*l*. per share: leaving balance in purser's hand, 63*l*. 18s. 10d. The prospects of the mine continue of the most favourable character; but, in consequence of the erection of some machinery, cost of engine, pit-work, &c., and the fall in price of tin, the next dividend will not be above 10s. per share.

At Spearne Consols meeting, a dividend of 1*l*. per share was declared, carrying to credit of next account a balance of 170*l*. 19s. 10d. The mine is represented as considerably improved since the last meeting.

At Balleswidden account for January and February, the accounts presented allowed a dividend of 7s. 6d. per share (609*l*.), leaving balance in hand to the amount of 650*l*. 16s. 9d. The mine is looking well.

At Wheal Reeth bi-monthly meeting, the profit for January and February amounted to 1126*l*., and a dividend of 5*l*. per share was declared, carrying to credit of next account 526*l*. The mine is represented as in a very improving and encouraging position.

The Goginan Mines (Wales) declared a dividend of 500*l*., on Thursday, being 5*l*. per share for the past two months. The management is with Messrs. J. Taylor and Son, at whose offices the dividends are paid.

At a meeting of North Pool adventurers, held at the mine, on Tuesday last, the accounts were presented and passed, showing—Balance from last account, 517*l*. 15s. 3d.; ores sold (less dues), 4900*l*. 4s. = 5417*l*. 19s. 3d.—Costs, &c., for Jan. and Feb., 1935*l*. 5s. 4d.; by dividend of 25*l*. per share, 2500*l*.: leaving balance in favour of mine, 982*l*. 13s. 11d.

At West Caradon bi-monthly account, the statement of accounts showed balance of 2165*l*. 9s. 5d. in favour of adventurers, and a dividend of 2*l*. 10s. per share was declared for January and February.

At Craddock Moor account for Jan. and Feb., a balance of 100*l*. 18s. 3d. was found in favour of the mine, but it was deemed necessary to make a call of 10s. per share for further operations.

At Gonamena two-monthly account, a balance of 174*l*. 17s. 6d. was found in favour of the mine. The report is highly satisfactory, and the prospects more encouraging than they have ever been before.

At Wheal Mary Emma meeting, a call of 2s. 6d. per share was made. The accounts were balanced to the end of February, when a small credit was found in favour of the mine.

At the annual meeting of the Blaenavon Iron and Coal Company, the statement of accounts showed a gross profit for the year of 12,000*l*.; after deducting interest on mortgage debentures, and current expenses, with the loss sustained in 1847, a credit of 1660*l*. 3s. 3d. is carried to next account. The prospects of the company are more cheering than they have been for some years past. Four furnaces have been in blast during the year, making, on an average, 122½ tons of iron per week each; and in improvements at the works, the sum of 10,083*l*. 10s. 2d. have been expended. The directors' report furnishes a satisfactory account of the proceedings in carrying out a system of economy, and some great practical improvements in their operations, which, it is hoped, will considerably increase the profits of the current year.

The adjourned meeting of the Abergwessin shareholders terminated far more satisfactorily than was anticipated. The non-payment of calls was, apparently justly, attributed to the deeds of the property not having been deposited with the company, in pursuance of previous resolutions. That difficulty being now removed, the shareholders have expressed their determination of paying up all arrears forthwith, to enable the concern to be properly worked. Satisfactory reports from Messrs. Evan Hopkins, N. Ennor, and A. Dean were read.

The half-yearly meeting of the Mexican Company was held on Thursday, detailed particulars of which are given in another column.

We learn that the mines generally in the western part of Cornwall are looking remarkably well, and some highly important improvements have taken place, which will give, no doubt, an impetus to the movements of some influential and enterprising parties, who are about resuming operations in some of the old mines: among these we may name Wheal Ann, in the parish of Phillack; Treloweth, in St. Erth; East Balleswidden, in Sancreed; Wheal Rodney and Tregartha Downs, near Marizion; Boscean and Wheal Guskes.

We have also received the following information, from a source on which we place great confidence.—*Levant Mine* is looking well, with every probability of a further improvement; the adventurers have agreed to erect new steam-stamps, which, when completed, will enable them to make much greater returns, and, consequently, profits.—In *Botallack* there is a very great improvement in a winze sinking under the 135 fm. level, going west; shares have been in demand at an advance.—*Spearne Consols* never looked better than at the present time—tin in every end, and more especially in the bottom levels east and west, the lode is so wide at each end. They have a splendid course of tin in the engine-shaft, and the lode still improving. The agents state that the tin stuff raised last month produced 20 cwts. of black tin per 100 sacks of stuff, and there was returned from one level upwards of 340*l*. worth of tin; these improvements will give a larger division of profits.—*Balleswidden Mine* is looking very well; the two-monthly meeting was held on the 30th April, when a dividend of 609*l*. was made, leaving a pretty large balance in hand.—*Wheal Bal* is progressing fairly, and a good lode of tin has been in the bottom end, and also in the shaft, which is in course of sinking. These lodes have been holding good for some time, and there is every appearance of a lasting and profitable mine.—At *Bosorn Mine*, since I last wrote you, there has been a wheel erected, and flat rods attached, which will enable the operations to be carried on with spirit. The mine is reported to be looking well, and the lode highly productive.—*Penzance Consols* is still improving; a good lode has been cut in the past week in Carthew's shaft, 3 fms. under the 18 fm. level, lode 3 ft. wide, worth 24*l*. per fm.; the stopes both east and west are looking exceedingly well.—*East Balleswidden* has improved; the men have cleared and secured the adit level from the mouth to the end, and within the last four weeks they have been working on the lode; during this week a rich course of tin has been discovered.—At *West Wheal Virgin* the engine-shaft is suspended, in consequence of the water being so quick; the men are employed in making leats to bring the water over a 30-ft. wheel, which is in course of erecting.—*Boscean Mine*, which has been suspended for some years, is being resumed by a highly influential company, and, from the varied reports, united with judicious management, there is every reason to calculate on a profitable mine.

Shares in the following mines have changed hands since our last:—Devon Great Consols, East Wheal Rose, Treviskey and Barrier, Trelawny, Mary Ann, Penzance Consols, Trehane, Condurrow, Heignston Downs, East and South Tamar, East Gunnis Lake, Alfred Consols, Tremayne, Wheal Longmaid, Tincroft, Tregear Consols, North Buller, South Tolgus, Stray Park, Cook's Kitchen, Herodsfoot, Bedford United, and East Buller.

In Foreign Mines there has not been much doing, if we except Santiago and United Mexican, in which we learn that some large transactions have taken place, especially in the former. St. John del Reys have been done, and some Copiapos, Barossa Range, Linares, and National Brazilian have changed hands.

Letters have been received from the Imperial Brazilian Mines to 23d Feb.; returns are very fairly maintained, and the prospects continue improving. The gold report from the two mines of Bananal and Gongo, from the 14th to the 22d Feb., is given at 9 lbs. 10 ozs. 3 dwts., and the total since January 1, to 67 lbs. 10 ozs. 12 dwts.

The National Brazilian advices are to the 26th Feb., and give the produce from Cocaes and Cuiaba, from the 15th to 26th Feb., at mks. 7 3 1 52. The report contains nothing of importance or new.

The Linares Mines weekly report advises of their having commenced carrying ore to Seville, for sale here. The mines continue progressing satisfactorily.

The Royal Mail steamer, *Tay*, Capt. G. M. Chapman, arrived at Southampton yesterday morning, with the usual British and Foreign West India mails. The freight list comprises the following:—Gold coin and bar silver, value $1,007,225, or 201,445*l*. sterling; also 43 lbs. 9 ozs. of gold-dust, value $8600; 2500 ozs. of silver; 22 lbs. of platina; British coin, value 595*l*.; 15,300 franc pieces, and precious stones, value 230*l*.—the total value of specie being $1,029,425, or say, 205,770*l*. sterling.

CURRENT PRICE OF GOLD AND SILVER.

Foreign gold, in bars .... per oz.	£3 17 9	New dollars .... per oz.	£0 4 10¼
" Portugal pieces	0 0 0	Silver in bars (standard)	0 4 11⅞

PRICES OF MINING SHARES.

BRITISH MINES.

Shares.	Company.	Paid.	Price
1000	Abergwessin	9	—
1024	Alfred Consols	8¾	25
1024	Arundell	2¼	—
1024	Ashburton United Mines	9½	—
1024	Balleswidden	9	14
128	Balnoon Consols	42½	50
905	Barristown	5¾	4 5
3630	Bawden	½	½ ⅝
6000	Bealbury	1	1
4000	Bedford	2½	5
1280	Birch Tor & Vitifer	10½	6 6½
5000	Black Craig & Craigton	—	5
8000	Blaenavon	50	12½
5000	Blisland Consols	1	—
1024	Bodmin Consols	3	3½
5000	Bodmin Moor Consols	1	3
60	Bosorn	4½	10 12½
100	Botallack	182 89	100 10
120	Brewer	5	2½
10000	British Iron, New, regis.	12	8
—	Ditto ditto, scrip	10	10
2400	Bryn-Arian	2	3 4½
107	Budnick Consols	52½	12
260	Butterdon	1	2 3
1000	Callington	22	5 5½
1000	Camborne Consols	7	3
20000	Cameron's Steam Coal	7	—
256	Caradon Mines	22½	10
256	Caradon United	24	5 8
1536	Caradon Vale	½	—
1000	Carbona	5	12 15
572	Caradon Wh. Hooper	5½	4½
1000	Carn Brea	15	115 120
1000	Carthew Consols	1½	7
113	Charlestown	220	—
500	Comblawn	5¾	4½
128	Comfort	45	45 50
256	Condurrow	20	95 100
2560	Cook's Kitchen	14	8½
1000	Coombe Valley Quarry	5	—
1000	Copper Bottom	7½	—
900	Court Grange	9	10
212	Craddock Moor	23½	5
128	Creeg Braws	120	30
500	Cubert Mine	12½	—
1000	Cwm Erfin	4	3½
1000	Daren	2	7 7½
7100	Derwent	10	3
502	Devon & Courtenay Con.	11½	2½ 2¾
1024	Devon Great Consols	1	227½
1000	Dhurode	2	5
182	Dolcoath	30	20
2560	Drake Walls	5½	2½ 3
10000	Durham County Coal	15	9
3000	Dyfngwm	10	5
2500	East Birch Tor	3	3
1024	East Buller	2	5 5½ 6
2048	East Crowndale	7½	1½
256	East Godolphin	10½	13
4000	East Gunnis Lake Junc.	½	½ ⅝
128	East Pool	15	65 70
9000	East Tamar Consols	1½	1⅝
258	East Tolgus	1½	6
128	East Tywarnhayle	1	2½
94	East Wheal Crofty	125	95
128	East Wheal Rose	50	510
256	East Wheal Seton	2½	2¾
—	East of Scotland Iron Co.	5	1¼
1280	Esgair Llee	2	3½ 4
248	Exmoor Wh. Eliza	11	10 12
494	Fowey Consols	40	45
1024	Freidd Llwydd Mines	1½	3½
256	Garras	41	24
4000	Gen. Mining Co. for Irel.	1½	1¼
2500	Georgia Consols (Tin)	½	1¼
256	Gonamena	44½	16
128	Goonvrea	4	2
256	Grambler & St. Aubyn	80	9 10
96	Great Consols	1000	250
512	Great Wheal Baddern	—	50
512	Gt. Wh. Rough Tor Con.	24½	20
6000	Grown State Company	5	5
1026	Gustavus Mines	3	3 3½ 4
256	Hawkmoor	12¾	70
6000	Heignston Down Con.	2¼	3½ 4
1500	Hennock Silver-Lead	21s.	4
4500	Hennock Iron & Tin	21s.	2
512	Herodsfoot	16	15 15½
10000	Hibernian	12½	1¾
1000	Holmbush	22	13
1900	Keswick	10	2 3
1024	Kingsett and Bedford	1½	4 4½
787	Kirkcudbrightshire	8½	5 5½
2048	Lamherooe Wh. Maria	9	4½
252	Lanarth Consols	—	7 8
256	Lelant Consols	47	25 26
160	Levant	—	175
1000	Lewis	17	9½ 10
1000	Llwynmalees	9	10
3600	Llynvi Iron	50	50
253	Lostwithiel Consols	23	10
6000	Marke Valley	10	¾ 1
5000	Mendip Hills	3½	3
128	Metha	34	—
20000	Mining Co. of Ireland	7	5
1024	New East Crowndale	2	2
1024	North Buller	1½	2¼ 3½
100	North Pool	45	510
140	North Roskear	5½	150
262	North Wh. Leisure	1½	2
512	North Wheal Vor	—	2½
128	Par Consols	55¾	650
1026	Pendarves Consols	2	5¾
1000	Pendarves & St. Aubyn.	4	4
1248	Pengelly Tin	1	1
6201	Pennant & Craigwen	2½	2½ 3
1000	Penybank and Erglodd	4	5
1024	Penzance Consols	22s 3d.	4 4½
5000	Peter Tavy & Mary Tavy	½	¾ 1
512	Plymouth Wh. Yeoland	6½	6
2500	Rhoswiddol & Bacheiddon	10	10
10000	Rhymney Iron	50	12
10000	Ditto New	7	3
2048	Runnaford Coombe Tin	1¾	3 3½

BRITISH MINES—*continued*.

Shares.	Company.	Paid.	Price.
9000	South Tamar	1	3
128	South Caradon	5	200
1100	South Dolcoath	5	½ 1
256	Sth. Friendsh. Wh. Ann	30	28 30
256	South Molton	7	12 13
1024	South Plain Wood	1	5
300	South Speed	5	5
256	South Tolgus	16	150
256	South Trelawny	28½	10
2000	South Wales Mining Co.	1	1½ 2
256	South Wheal Basset	10½	245 250
124	South Wh. Frances	160	420
256	South Wh. Josiah	2	3½ 4
10000	Southern & Western, Irish	2½	4
280	Spearne Moor	30	40
128	Spearne Consols	10	60
256	St. Aubyn and Grylls	2½	3 5
94	St. Ives Consols	—	80
128	St. Michael Penkivel	5	10½
999	St. Minver Consols	1	6
1000	Stray Park	43	24½ 25½
9600	Tamar Consols	3	4 5
10240	Tavistock Consols	½	½ ⅝
1024	Tavy Consols	8½	2 4 5
6000	Tincroft	7	13½
58	Tokenbury	170	10
240	Tolcarne	8	14
5000	Tregeare Consols	1	1
256	Tregurden	3½	7 8
256	Trehane	1½	30
5000	Treleigh Consols	6	2 2½
200	Trelyon Consols	—	2½
2000	Trenance	3	—
1500	Trenault Lime Quarries	2	3
96	Tresavean	10	95
120	Trethellan	5	32
120	Treviskey and Barrier	130	235 250
512	Trethevy Copper	2	2 2½
512	Treville (Lewanick)	½	4 5 6
1000	Tyllwyd	2	2½
200	United Mines	50	150 160
256	Wellington Mines	25	35
128	West Buller	10	420
256	West Caradon	20	93 96
512	West Fowey Consols	40	12
1024	West Par Consols	5	—
2500	West Polgooth	5	6½
	Ditto Notes	2	2½
512	West Providence	9	16½ 20
200	West Seton	45	150
120	West Trethellan	5	20
512	West Wheal Frances	1¾	8
256	West Wh. Friendship	9	8
3845	West Wheal Jewel	12	2½ 3
910	West Tolgus & Treloweth	12	3 3½
1024	West Wheal Treasury	7	6½ 7
1024	West Wheal Virgin	½	½
1024	Whiddon Mines	4½	—
5200	Wicklow Copper	5	13½
5000	Wicklow Copper and Sulphur Mines	3	3½ 3¼
107	Wheal Adams	130	150
1000	Wheal Agar	—	6
256	Wheal Albert	10	28 29
240	Wheal Anderton	28	—
128	Wheal Ann	—	50½
512	Wheal Anna Maria	7	4
120	Wheal Bal	10	22
256	Wheal Benny	14½	2
1024	Wheal Bray	11½	—
232½	Wheal Calstock	9	10
256	Wheal Carpenter	—	7½
268	Wheal Courtenay	20	23
182	Wheal Elizabeth	9	30 40
256	Wheal Fortescue	15	—
100	Wheal Friendly	70	66½
388	Wheal Franco	27	10 11
1000	Wheal Grose	3s	5½
100	Wheal Henry	—	35 45
6000	Wheal Langford	½	2
1024	Wheal Lawrence	3½	3½
112	Wheal Margaret	79	175 180
512	Wheal Mary Ann	5	39 40 2
5000	Wheal May	½	—
360	Wheal Oak	25½	5
3000	Wheal Penhale	1½	6
210	Wheal Prospect	4	7
120	Wheal Reeth	41	75 80
198	Wheal Seton	107	260
1056	Wheal Sarah	4½	7
512	Wheal Sophia	5¾	6
128	Wheal Squire (St. Erth)	—	5
128	Wheal St. Ann	30	35
1100	Wheal Trescoll	6½	7
260	Wheal Trelawny	7½	90 94 5
256	Wh. Tremaine (St. Ervan)	9½	2½
1024	Wheal Tremayne	9½	9½ 10
267	Wheal Tryphena	40	62½
512	Wheal Venton	1½	2
1000	Wheal Vincent	5	8
128	Wheal Vlow (Perranz.)	1½	1½
184	Wheal Vyvyan	—	60

FOREIGN MINES.

Shares.	Company.	Paid.	Price.
5000	Alten Mining Company	14½	2½ 2¾
15000	Asturian Mining Co.	15	—
20000	Australian	4	3½ 4½
6000	Barossa Range	1½	1½
10000	Brazilian Imperial	23	6 7
12000	Cobre Copper Co.	40	32
10000	Copiapo Mining Co.	14	4 4½
20000	General Mining Ass'n.	20	13 13½
4000	Guadalcanal	5	1
2000	Ditto Preferential	2½	2
5000	Kinzigthal Mining Ass.	2	½
5051	Mexican Company	59½	—
20000	Mexican & South Amer.	8	1 1½
5000	National Brazilian	30	4
104000	N. Brit. Australasian	1	8s
7000	Royal Santiago	10	13½ 14½
11000	St. John del Rey	15	14¾ 14½
43174	United Mexican ... Av.	28½	5¾ 6½
10,000	Worthing (S. A.)	2	2½

*** We should feel obliged by agents, or others, furnishing us with corrections—our object being to present as correct a list of prices as can be obtained.

RAILWAY TRAFFIC RETURNS.

Names of Railways.	Length. 1850	Length. 1849	Present actual cost.	Price p. share	Last Div.	Traffic Returns. 1850	Traffic Returns. 1849
Aberdeen	72	16	1,000,547	7½ 7¼	—	£1012	£420
Belfast and Ballymena	37¾	37	491,159	17	5	559	481
Birkenhead, Lancashire, & Chesh.	15	15	960,653	18¾	5	1023	972
Bolton, Blackburn, & West Yorksh.	14	14	968,112	5½	—	—	414
Bristol and Exeter	84½	75	2,924,661	64	3½	4210	—
Caledonian	160	141	5,149,320	7¼	3	6169	5074
Chester and Holyhead	94½	81	3,581,587	6¾	4	2334	1317
Dublin and Belfast	22	—	—	—	—	266	237
Dublin and Drogheda	58	35	778,565	25 6	—	904	762
Dublin and Kingstown	7¾	7	349,736	—	6	1234	1273
Dundee, Perth, & Aberdeen Junc.	47½	47	179,775	7¾ 8	3	593	520
East Anglian (Lynn to Ely)	67½	67	1,308,194	1½	—	724	586
East Lancashire	75½	75	3,192,759	6¼	5	2970	2488
Eastern Counties and Norfolk	322	322	13,139,156	7½ 7	—	14856	15432
Eastern Union	95	50	1,782,7 2	4½	—	2007	1132
Edinburgh and Glasgow	89½	68	2,644,378	26½ ¾	4	3865	3796
Edinburgh and Northern	70	70	2,024,082	5¼ ½	2	2465	2257
Glasgow, Paisley, and Ayr	102½	74	1,996,201	43½ 4½	3	2905	2608
Glasgow, Paisley, & Greenock	23	23	866,074	10¾ 11	2½	966	985
Gt. Northern & East Lincolnshire	143	110	5,406,157	5¾ 6	5	2869	2455
Gt. Southern & Western, Ireland	188½	110	3,890,228	29½ 29	6†	4524	3948
Great Western	230½	200	13,189,565	51¼ 51	4	16575	19575
Lancaster and Carlisle	90	90	1,476,808	52 1	4	3584	2207
Lancashire and Yorkshire	224	190	10,818,478	34 34½	3	12333	11635
London and North Western	478½	428	25,286,876	101½ 1	5	42884	40572
London and Blackwall	5¾	4	1,363,529	3¾	1-12	829	699
London, Brighton, & South Coast	171½	162	7,103,102	78½	4½	8312	7468
London and South-Western	242	194	7,490,688	58½	3½	9386	9538
Londonderry and Enniskillen	14½	14	171,026	16	—	169	139
Manchester, Sheffield, & Lincolnsh.	160½	94	2,078,135	13	5	5303	3408
Midland Company	492½	463	14,042,340	32 31¾	5½†	22039	21255
Midland Great Western (Irish)	50	30	362,978	25½ 4¾	4†	1232	1276
Monklands	36	—	486,245	—	6	710	770
North British	135	110	2,800,747	7½	3	3326	3119
Scottish Central	45½	45	1,448,969	11½ 11¾	5	1461	1157
Scottish Midland Junction	34½	32	571,877	7¾	—	444	291
Shrewsbury and Chester	48	48	1,161,840	7¾ ½	½	1314	1372
Shropshire Union	30	—	—	2½	—	475	—
South Devon	57¾	57	1,951,933	5½	5	1825	1443
South-Eastern	234	165	8,116,914	14 13¾	3½	9632	7130
Taff Vale	38	38	907,398	—	6½	2472	2147
Ulster	36	36	675,000	45¾	—	893	777
West Cornwall	13	13	209,386	—	—	294	314
Whitehaven Junction	12	12	171,962	9¾	1	173	206
York, Newcastle, & Berwick	290½	269	5,251,999	11½	2¾	13235	12024
York and North Midland	260	260	4,875,682	14¾ 15	—	6962	6652

LATEST CURRENT PRICES OF METALS.

LONDON, MAY 3, 1850.

ENGLISH IRON. *a*	per ton.
Bar, bolt, & square, London	£5—5 5—5 15
Nail rods	6 5 0—6 10
Hoops	7 5 0—7 10
Sheets (singles)	7 15 0—8 5
Bars, at Cardiff & Newport	4 12 6—4 15
Refined metal, Wales*	3 0—3 15
Do. anthracite*	3 10 0
Pigs in Wales	3 0—3 15
Do. do. forge	2 10—3 2 6
Do., No. 1, Clyde ... *net cash*	2 2 6—2 3 6
Blewitt's Patent Refined Iron for bars, rails, &c., free on board at Newport*	3 10 0
Do., do., for tin-plates, boiler plates, &c., ditto	4 10 0
Stirling's Patent Toughened Pigs in Glasgow	2 13 0
Stirling's Patent Toughened Pigs in Wales	3 0—3 10
Staffordshire bars, at the works	5 15—6 0
Pigs, in Staffordshire	3 5 0
Rails	4 15—5 0
Chairs	4 0 0
FOREIGN IRON. *b*	
Swedish	11 10—13 0
CCND	—
PSI	—
Gourieff	—
Archangel	—
FOREIGN STEEL. *c*	
Swedish keg	14 0—14 15
Ditto faggot	14 5—15 0
ENGLISH COPPER. *d*	
Sheets, sheathing, & bolts, *p. lb.*	0 0 10
Tough cake .... *per ton*	88 10 0

Tile	£87 10 0
Old copper *e* .... *per lb.*	8½d 9d
Yellow Metal Sheathing	8½d
FOREIGN COPPER. *f*	
Chili	90 0 0
ENGLISH LEAD. *g*	
Pig .... *per ton*	18 0—18 10
Sheet	19 0—19 10
Pipe	20 0 0
Red lead	19 10 0
White ditto	25 0 0
Patent shot	21 0 0
FOREIGN LEAD. *h*	
Spanish, in bond	17 5—18 10
ENGLISH TIN. *i*	
Block .... *per cwt.*	3 13—3 17
Bar	3 14—3 18
Refined	4 5 0
FOREIGN TIN *k*	
Banca, H. C.	3 12—3 15
Ditto, for Export only	—
Straits	3 11—3 13
TIN-PLATES. *l*	
IC Coke .... *per box*	1 1—1 7
IC Charcoal	1 11—1 13
IX ditto	1 17—1 18
SPELTER. *m*	
Plates, warehoused .. *per ton*	15 0—15 5
Ditto, to arrive	—
ZINC. *n*	
English sheet ..... *per ton*	21 0—21 10
QUICKSILVER *o* ..... *per lb.*	4s. 5s.

Terms.—*a*, 6 months, or 2½ per cent. dis.; *b*, ditto; *c*, ditto; *d*, 6 months, or 3 per ct. dis; *e*, 6 months, or 2½ per cent. dis.; *f*, ditto; *g*, ditto; *h*, ditto; *i*, ditto; *k*, net cash; *l*, 6 months, or 3 p. ct. dis.; *m*, net cash; *n*, 3 months, or 1½ p. c. dis.; *o*, ditto, 1½ dis.

* Cold-blast, free on board in Wales.

GLASGOW, MAY 2.—For the last three days there has been considerable enquiry for pig-iron, and a fair business has been done, at advanced prices. We quote mixed Nos. at 43s. 6d. to 44s. cash, with an upward tendency.

LIVERPOOL, MAY 1.—There has been some speculative inquiry for bar-iron, and the price is firmer during the last few days; but still permanent relief can only be looked for in connection with a large reduction in the make of iron, which the present ruinous price is likely to bring about speedily. Scotch pigs are very depressed, the production still continuing much in excess of the demand. The price is 42s. to 42s. 6d. per ton for mixed Nos., with very little healthy business doing. Tin-plates are rather easier of purchase. No change in lead or copper.

NEW YORK, APRIL 17.—The iron market continues dull and unsettled, and prices rather favour buyers. The sales since our last are—Scotch pigs in lots, at $21 to $22; 80 tons English bar, $37 50 c. to $38; 500 ditto refined, about $45; and 20 ditto hoop, $56, six months. The latest considerable sale of Scotch pig was 1100 tons Glengarnock and Gartsherrie, from yard, at $21, six months.

BOMBAY, APRIL 2.—Swedish bar-iron alone maintains its former value, and is in demand, as is also sheet-lead. All kinds of British iron, Swedish steel, and spelter, remain as before. In copper the prices of braziers', sheathing, and bottoms, have declined—that of tile remains steady. Large quantities of South American copper have been received *viâ* China, but no sales have as yet taken place.

CALCUTTA, MARCH 22.—Metals generally are flat. Sheathing copper is quoted at 35-8 without sales, and with downward tendency. Iron is but in moderate demand, and rather lower. Spelter is neglected, but is still quoted at 7-12 to 7-14, although no sales can now be effected at those rates.

EXPORTATION OF THE PRECIOUS METALS.—The following are the official returns of the exports of gold and silver from the port of London for the past week:—Gold coin to Hamburg, 100 ozs.; ditto to Madras, 500 ozs.—Silver coin to Guernsey and Jersey, 328*l*.; ditto to Rio Janeiro, 30,511 ozs.—Total gold, 600 ozs.; silver, 382*l*., and 30,511 ozs.

LEAD ORES.

TICKETINGS FOR ABOUT 100 TONS LAXEY LEAD ORE.

Douglas, Isle of Man, April 27.

Bidders.	*Price per Ton.*
Pontifex and Wood (purchasers)	£21 2 6
Thomas Somers	21 0 0
Tamar Smelting Company	20 6 6
J. H. Meredith, trustee to the late J. T. Treffry	20 3 6
Combmartin Smelting Company	20 0 0
Mather and Co.	19 12 6
Sims, Willyams, and Co.	19 0 0

Sold at Bagillt, on the 1st of May.

Mine.	*Tons.*	*Price per Ton.*	*Purchasers.*
Machynlleth	39	£11 18 0	Walker, Parker & Co.
Eagle Rock	20	11 5 0	Ditto.
Black Craig	43	10 3 6	Newton, Keates & Co.
Sold at Liskeard.			
Herodsfoot	75	13 9 6	Newton, Keates, & Co.
Tregorden	5	£29 1 6	Tamar Company.
Sold in London.			
Callington	42	£19 11 6	T. Somers.

BLACK TIN.

Mine.	*Tons.*	*Price.*	*Purchaser.*
Plymouth Wh. Yeoland	4½	£44 10 0	Calenick Smelting Co.
ditto	½	34 0 0	ditto
Polberou Consols	24¾	40 7 6	Daubuz, Calenick Co. Williams, & Bissoe Co.
ditto	1½	42 2 6	Calenick Smelting Co.
ditto	1½	31 2 6	ditto
Drake Walls	6½	41 15 0	J. H. Enthoven & Co.
ditto	3½	37 10 0	Calenick Smelting Co.

COPPER ORES.

Sampled April 27, and Sold at Tyack's Hotel, Camborne, May 2.

Mines.	*Tons.*	*Price.*
North Roskear	89	£8 4 0
ditto	85	6 1 0
ditto	80	5 17 0
ditto	71	5 19 0
ditto	70	1 18 6
ditto	68	5 6 6
ditto	55	1 6 6
ditto	50	1 13 0
ditto	40	6 1 0
ditto	39	7 2 0
ditto	38	4 14 0
North Pool	114	4 7 6
ditto	86	4 8 0
ditto	85	4 12 6
ditto	75	2 10 0
ditto	72	2 1 0
ditto	58	2 9 6
ditto	51	2 8 0
ditto	20	1 2 0
Tincroft	96	4 9 6
ditto	70	3 9 6
ditto	69	2 5 0
ditto	68	2 16 6
ditto	63	4 10 6
ditto	50	3 8 6
ditto	47	5 3 0
ditto	46	1 12 6

Mines.	*Tons.*	*Price.*
Tincroft	45	£4 7 6
Consolidated	103	5 18 6
ditto	90	4 14 6
ditto	82	4 13 6
ditto	79	4 9 0
ditto	68	7 1 0
ditto	67	4 13 6
ditto	56	4 18 0
Wheal Seton	70	5 7 0
ditto	67	5 8 0
ditto	53	2 14 0
ditto	50	2 11 6
ditto	48	4 16 0
Fowey Consols	85	5 13 0
ditto	81	6 11 0
ditto	78	6 6 0
Wh. Basset	90	3 9 6
ditto	49	5 19 6
ditto	47	5 17 0
ditto	34	20 17 0
South Wh. Frances	75	7 8 6
ditto	72	6 14 6
ditto	33	8 14 0
ditto	23	7 6 6
Copper Bottom	31	2 19 0
Wh. Clifford	19	4 18 0

TOTAL PRODUCE.

North Roskear	685	£3484 4 6	Fowey Consols	244	£1502 4 0
North Pool	561	1893 6 6	Wh. Basset	220	1589 7 6
Tincroft	554	1990 4 0	South Wh. Frances	203	1496 13 0
Consolidated	545	2837 9 0	Copper Bottom	31	91 9 0
Wh. Seton	288	1238 11 0	Wh. Clifford	19	93 2 0

Average Standard .... £107 19 0 | Average Produce 7

Average Price per ton £4 16 0

Quantity of Ore .... 3350 tons | Quantity of Fine Copper, 255 tons 13 cwts.

Amount of Money £16,216 10 6

LAST SALE.—Average Standard .... £108 18 0.—Average Produce 6¾

Standard of corresponding sale last month, 107*l*. 18s.—Produce, 7.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
Mines Royal	290	£1311 9 6
Vivian and Sons	554	1793 5 0
Freeman and Co.	512	2553 3 4
Grenfell and Sons	851	4497 0 6
Sims, Willyams, and Co.	512	2749 1 4
Williams, Foster, and Co.	352	1902 18 3
Schneider and Co.	279	1409 12 7
Total tons	3350	£16,216 10 6

Copper ores for sale on Thursday next, at Andrew's Hotel, Redruth.—Mines and Parcels.—Carn Brea 723—Tywarnhayle 525—Par Consols 336—Wheal Buller 282—Levant 236—Wheal Mary 132—West Wheal Treasury 125—Wheal Vyvyan 94—Wheal Agar 78—Alfred Consols 65—Wheal Tremayne 61—South Crinnis 37—Prideaux Wood 32—Pendarves Consols 30—Botallack 24.—Total, 2780 tons.

NO SALE on Thursday week, May 16.

COPPER ORES

At SWANSEA, for sale May 9.—Cobre 115, ditto 109, ditto 105, ditto 58, ditto 42, ditto 100, ditto 96, ditto 73, ditto 54, ditto 52.—Copiapo 95, ditto 93, ditto 76.—Cuba 60, ditto 17.—allymurtagh 50.—Ivy Slag 8.—Total, 1203 tons.

NOTICES TO CORRESPONDENTS.

*** We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses—not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

"T. E." (Tredegar).—An article on improved railway chairs and sleepers appeared in the *Mining Journal* of the 19th January.—Address Mr. S. Reed, Newcastle-on-Tyne, who will readily furnish information of some value in connection with the subject.—We will obtain the copy of any Act of Parliament, and forward it on receipt of particulars.

"An Adventurer" should read Mr. Murchison's paper on the Cost-book System, in last week's Journal.—The *Glossary of Mining Terms* can be obtained through any bookseller.

KINZIGTHAL MINING ASSOCIATION.—"M." (Jersey).—Not sufficient members being present, no meeting was held, or a report of the proceedings would have appeared in our Journal. We are, nevertheless, obliged for the letter, and are always anxious for the communication of mining information from all parts, and from all sources—authenticity, of course, guaranteed.

"A Reader" (Ashburton) is in error. We have since seen a share list, dated "Adelaide Exchange, Jan. 4," in which is quoted—Burra Burra, 141*l.*, cash, *sellers;* Wheal Gawlers, 12*l.*, *sellers;* and Princess Royals, 50*l.*, at four months. "A Reader" had better communicate with his informant in the colony, and request that regular information be supplied to us, which will prevent a recurrence of the "delusion."

Capt. O. H. MATHEWS.—A letter, dated Toronto, March 27, says—"The friends of this gentleman will be gratified to learn that he has returned in safety to this country, after having spent the winter partly in England and partly in Cuba. They will also feel an additional pleasure in learning that, since his departure from England, he has been elected a Fellow of the Royal Geological Society of London. This high compliment has been paid him on account of his eminent abilities as a practical miner and geologist. With the opening of the navigation, we understand that Capt. Mathews will proceed to Lake Superior, to resume his professional duties."

DEALINGS IN SHARES.—A measure for the better regulation of share dealings has just been adopted by the Committee of the Stock Exchange, which will probably have a very beneficial influence on the value of railway property. The resolution adopted is, that parties buying shares shall be permitted to buy in at any price should the shares not be delivered on the next settlement after that for which they were bought, at the peril of the broker who sells them. This course will, undoubtedly, contribute in a very considerable degree to check "bearing" operations, which heretofore have had a much greater influence in depreciating the value of railway property than nearly all other causes put together.

DEVON GREAT CONSOLS.—SIR: In your Journal of the 2d March we had an exceedingly interesting description of these important mines, from your able correspondent, Mr. Murchison, who also promised to favour us with a geological description of the country around the sett. From the intelligence and ability displayed by Mr. M. in his various papers, and from his known connection with one of the most celebrated geologists of the day, much importance is attached to whatever emanates from his pen, and I beg to inform you that many of your readers in this district await with some anxiety the appearance of the promised communication.—J. H.: *Tavistock, May* 3.

GREAT WHEAL FREDERICK.—A large shareholder in this adventure is anxious for information respecting its present position and prospects. Perhaps some of our correspondents can furnish us with a few particulars?

"Z." (Deal).—Bourne's *Catechism of the Steam-Engine* is published by Longman & Co.

"A. M." (Neath).—A letter forwarded to our office will reach Mr. Evan Hopkins.

The hearing of the cause of the Electric Telegraph Company against Messrs. Willmer and Smith, after repeated applications for postponement by the prosecution, has been fixed for Monday next, at the Court of Queen's Bench, Westminster.

"N. R." (York).—We cannot give any information respecting the value of the shares—apply to a broker.

We decline inserting the letter of "A Shareholder in Lamberoe." By reference to a note appended to the report, it will be seen that assays of the ore from the tin lode are being made by several experienced parties—which course is better calculated to satisfy those interested than newspaper correspondence. We presume the result will appear in our next Journal.

WHEAL ANDERTON.—"T. B." (Tavistock).—All the information we receive respecting this mine is published in our Journal: we have no idea what amount will be requisite to be called, and certainly cannot say when a dividend may be expected.—Address Capt. Carpenter, who will, doubtless, forward such information as may not prejudice the undertaking.—We have just learned that 7 tons of tin have been sampled this week.

"E." (Devonport).—The letter respecting Wheal Samson had better be forwarded to Mr. Thomas, at the office of the company, who will, doubtless, give any necessary information. Its insertion would necessitate our publication of a lengthy statement in reply.

TUBULAR BRIDGES.—SIR: Mr. Motley admits the solution of my first problem (fig. 1) to be correct, but says that it "confirms his statement;" the contrary opinion is founded on the fact that, in speaking on the subject of strain or "leverage" on oblique suspending bars, he has invariably represented it as being in proportion to the difference between the vertical elevation (C, B) of the upper end of the suspending bar at the point of contact (B) with the pier, and the horizontal projection (C, D) of the lower end of the same at the point of junction (D) with the beam of the floor; and in no one instance had he alluded to it in a way to lead to the conclusion that he was aware that the strain was measured in the manner I have demonstrated: hence the assumed necessity for the aid of mathematical diagrams by which clearly to elucidate the subject, the advantage of which diagram I apprehend no one will dispute. It is candidly admitted by your correspondent that, in regard to economy in the weight of material, the advantage would be in favour of all the suspending bars converging in a point at the top of the tower, as shown in fig. 2; but its superior inflexibility is questioned, on the supposition that the "first suspender of great length would have no support, consequently tend to assume a curved line;" it should be understood that, as the *horizontal distance* between the bearings is the same in both cases, the greater *length* of the one than the other suspending bar will not augment its tendency to deflect, or "assume a curved line:" and, besides, it was not stated, and need not have been inferred, that (if deemed advisable) this bar would not be supported as well as the others, nor would it be necessary that its support should proceed direct from the floor, as may easily be perceived. It appears that the supposed deflection which I was apprehensive would be fatal to your correspondent's plan, is to be prevented by "gibs and keys"—an expensive contrivance not needed when the whole of the chains proceed from the top of the towers, the increased strength and diminished cost of which likewise favours the adoption of, or preference to, this plan. In regard to fig. 3, intended to illustrate Mr. Motley's plan of under suspension bridges, every conclusion come to, or statement made, by me of it, I now affirm to be correct, and challenge him, or any other "Engineer of the Present Generation," to disprove or demonstrate to be in error. If your correspondent will take the trouble to look over his calculations in reference to his substitute for those expensive structures at the Menai Straits, he will discover that he has committed a serious mistake in regard to the strain on the chains, it being more than double his estimate.—AN ENGINEER OF THE NEXT GENERATION.

CLOSING THE MOUTHS OF OLD COAL SHAFTS.—"H. G." (Manchester) writes—"Through the medium of your Journal, I would call the attention of the authorities to the old coal shafts in the neighbourhood of this town, as they are now forming a ready receptacle for all victims of crime—for no one can say what may be lying at the bottom of them. Instead of the railing now round them, I would suggest that an iron grating should be secured over their mouth, which would prevent any thing being thrown down them."

MR. F. COXWORTHY AND THE SEWERS QUESTION.—SIR: As the abettor of rectitude in the particular walk of your editorial career, you may be induced to permit me to rectify, through the medium of your columns, a little of that abuse which ever and anon is more or less prevalent in all societies, constituted like a basketful of frogs, wherein whilst all strive to be uppermost, this enviable lot is neither doled to the big nor the strong, to the exclusion of the long-armed and reckless climber. In your last week's Journal is a copy of a letter, addressed to the Commission of Sewers, by Mr. F. Coxworthy, to which I beg to refer my readers, in which is the following remarkable passage, which you will permit me here to quote, to serve as a textual peg, whereon to hang some observations:—"Should the commissioners ultimately decide that this desirable object is to be accomplished by a company, they will, of course, hold as sacred the principles of the respective competitors; I, therefore, beg to specify that mine consists in collecting in the sewers themselves the solid matter of sewage by decomposition, *and filtration, if necessary*, for agricultural *and other purposes.*" I say remarkable, because whilst Mr. Coxworthy invokes the sentiments of inviolable respect for the particular system of drainage propounded by each contributor of plans and specifications to the Metropolitan Commission of Sewers, he, nevertheless, offends against his own salvo, by asserting to be what is not part of his own plan so sent in. But shall I say borrowed unthinkly from my communication thereto, as may at once, and without mistake, be seen, on reference to, and perusal of, the *Records* (Nos. 73 and 76) *of the Metropolitan Commission of Sewers?* Although not fatal to my claim in this regard, it is unfortunate for me, and certainly for the public at large, that "a gap was made to occur in my manuscript," and a corresponding hiatus and deficiency of specificational detail at page 109 of the *Records*, No. 76, above quoted, wherein was given a complete system of street drainage, which, for an outlay of 35,000*l.*, could be completely carried into full operation over all the metropolis within seven years, beginning with the worst, and ending with the best drained districts. Wishing Mr. Coxworthy's company all the rapid advances and success it merits, I must take this opportunity, as in the publication of "banns of wedlock," of forbidding his assumption, as part of his own plan, of any system of sewage filtration within the sewers, solely communicated by myself out of 200 contributors, himself included.—WILLIAM RADLEY, Ch. E.: *Clapham, April* 30.

"A Subscriber" (Cambridge).—See a notice of Mr. Wyatt's invention in this day's Journal. We will collect some information on the subject for an early Journal.

We have several reviews in type, but which, with some miscellaneous articles and letters, are necessarily postponed.

*** It is particularly requested that all communications may be addressed—

TO THE EDITOR,
Mining Journal Office,
26, FLEET-STREET, LONDON.

And Post-office orders made payable to Wm. Salmon Mansell, as acting for the proprietors.

THE MINING JOURNAL
Railway and Commercial Gazette.

LONDON, MAY 4, 1850.

The MINING JOURNAL is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained, before Twelve, of all news agents, at the Royal Exchange, and other parts of London.

We have received several recent communications from shareholders in the ASTURIAN MINING COMPANY, enquiring as to their prospects and liabilities. With regard to the former, we cannot abstain from expressing our condemnation of that apathy, or timidity, which has caused our correspondents to absent themselves from the meetings of the company, where they could have learned, from the succession of events, since the 26th June last, that no exertions can render commercial enterprise in such cases prosperous, without the combined support and attention of all parties interested.

There were two plain alternatives suggested in last September, when the debts of the company were some 18,000*l.* or 20,000*l.*, which it was necessary to discharge to produce a profitable result—the one, to proceed forthwith to the Court of Chancery; the other, to have recourse to an enforced contribution, by way of a call of 2*l.*, to realise a sum adequate to meet the most pressing claims, and allow a reconstitution, by which some salvage might be recovered from the *debris* of the investment so improvidently made. Law is a terror to most men of business; and, consequently, it was a natural bias which induced the general meeting to adopt the call, with the exception of the protest of one proprietor. If all parties had done their duty, it is probable that the calculations of the directors might have proved correct; and that the sum to be collected (say, 19,000*l.*) would have been sufficient. But when we find that only 9000*l.* has been received, how can the shareholders imagine that it would pay off 18,000*l.*, and, as we understood at the time, an accumulation of 2000*l.* per month? Can any man be sane, and ask why bright prospects do not open when a proprietary has been so remiss in the performance of a duty which went hand in hand with their interest? The policy of the proposed call was to save the property, irrespective of past mismanagement, postponing for that obvious and pressing necessity all questions of account with the directors The proposition was, in fact, so unexceptionable, that we could not refuse our support; and, accordingly, we have given, up to the present time, every encouragement to the exertions of the board. The measure has failed; we cannot believe it to be through the carlessness of the liquidators, but by reason of the supineness of the shareholders.

What other prospects can there be for the shareholders but exactions and loss. If a trader be in debt, without being enabled to turn into cash the capital on which he is justified in calculating, what is before him but bankruptcy, or loss, in sacrificing by forced sales? Are companies more exempt from the inevitable consequences of improvidence and unforeseen obstructions than individual adventurers? By no means. The unsoundness of the origin of the speculation of the Asturian Company is as plainly proved by its present position, as that of any trader who has sought relief in the Court of Bankruptcy, on account of an erroneous principle in business, and false computations.

We do not wish to prejudge this particular case, by saying that the hopes held out at the last meeting of the company are delusive. Every expedient to preclude the *ultima ratio*—a winding-up—is worthy of trial, and we forbear all speculation upon the probability of effectnating some measure of relief, with the sincere wish that the directors may find the necessary funds to support their credit, which seems the immediate problem to be solved. We have reason to know that there are several of those gentlemen, so uncomplimentarily alluded to of late in Parliament, on the look-out for a job. We do not pretend to say that a winding-up is inevitable, but we have heard that more than one attempt will be made to bring this case into the vortex of the Master's Office. We, therefore, hope that no substantive excuse may be given to any one by a failure in the payment of the company's obligations.

We have heard of cases where the shareholders have passed their shares into the hands of persons, who are buyers for the mere purpose of having a title to present a petition. From the source of our information, we have no doubt of the fact. This should act as a stimulus to the exertions of those who are still striving to save the company's property. But lest such transactions should have originated in the hope of evading liability, and lest they should be adopted as precedents for a like purpose, we may be permitted to anticipate our observations upon the liabilities, by stating that, to a certainty, a transfer will not operate as an exoneration from the debts due at the time of its execution; and there are some doubts that in cases of this kind it would exempt from future contracts. We advise all persons who may so dispose of their shares to obtain a solvent and sufficient guaranty in writing (not a Stock Exchange guaranty) from the transferee, to meet all present or future liabilities, as the agreement for sale may be. However, we consider it a most unwise, and, we will add, an improper course for any shareholder to attempt, save under extreme pressure, any such evasion of his obligations, or to place shares in the hands of parties who merely speculate in litigation, and thereby to throw obstructions in the way of those he is bound to aid.

In returning from this digression, we will for the present merely add, for the information of our correspondents, and those interested, that the future must depend on the success of the experiment now in progress, and of which it is impossible to define at this moment the result. A few weeks must elapse before we can expect an intimation of the nature of the arrangements to be proposed. If the company's credit can be maintained, we augur a favourable conclusion; otherwise we must make up our minds to see *the matter* figuring, at no distant period, amongst the other announcements from Southampton-buildings.

A deputation from the coal miners of Lancashire, Cheshire, Durham, and Northumberland, consisting of Mr. Matthew Richardson (Northumberland), Mr. John Francis (Cheshire), Mr. Ind (Northumberland), and Mr. Swallow (Lancashire), have had an interview with Sir George Grey at the Home-office. The deputation was accompanied by Sir Joshua Walmsley, M.P., Mr. Hume, M.P., Mr. Thicknesse, M.P., Mr. Headlam, M.P., Mr. Wyld, M.P., Mr. Goldsworthy Gurney, and Mr. H. Miller. Mr. Hume stated that several petitions would be presented to the House of Commons in the ensuing week, previous to which he deemed it desirable to learn if it was the intention of Government to introduce any bill to ameliorate the condition of the working miners. Sir George Grey said, that he was fully alive to the necessity of some authorised inspection, but he was not prepared to say what was the intention of Government, until the reports made by Prof. Phillips and Mr. Blackwell were laid before the House. Mr. Wyld urged the necessity of some immediate steps being taken, as the session was now progressing, and the question was one of life and death.—The deputation, accompanied by Mr. H. Miller, had an interview with Sir R. Peel yesterday morning, at his residence in Whitehall-gardens, when the right. hon. bart. expressed his sympathy for the operatives engaged in their perilous occupation, and his resolution to support their cause when it was brought before the Legislature.

COAL MINES.—In the House of Commons, on Tuesday evening, a petition was presented by Mr. Hume, from between 9000 and 10,000 practical workmen in Northumberland and Durham, complaining of the dangers to which they were exposed in working the mines arising from fire-damp, calling the attention of the House to the large number who lost their lives by explosions throughout England in 1849, amounting to 760 individuals, and praying that the Government would send down inspectors to these mines to try and remove these dangers

JAMES WATT.—An announcement of much interest to the scientific world appears in the advertising columns of this day's Journal—that of the first engine made by the illustrious Watt being for sale. We shall be curious to watch the destiny of this piece of machinery. We have little doubt an attempt will be made to secure it for some of our institutions, and which we hope will prove successful, rather than so famous a "relic" should go out of the country.

RAILWAY CALLS FOR MAY.—The amount called for the present month, as far as yet advertised, is 886,399*l.*, against 1,071,088*l.* in the same period of last year, 3,246,848*l.* in 1848, and 3,440,675*l.* in 1847; the total amount called from the 1st January to the 31st May, 1850, is 5,444,147*l.*

THE BRITANNIA-BRIDGE.—The engineers are now busily engaged in the preliminary preparations for floating the parallel line of tube, the first great section of which, it has been arranged by Mr. Stephenson, Capt. Claxton, and Messrs. Clarke, shall be turned round upon a fixed radius at one end, and swung into the excavations at the close of this month. This operation will have the effect of bringing the tube 200 yards nearer its appointed position, but it will then, owing to its having been constructed at that greater distance down the coast, be only in the position occupied by the tubes now up on their first starting. With this additional difference the operation will be a counterpart of the first floatation. The final removal of the tubes is fixed to take place on the 10th and 11th of June.

ON SMELTING MAGNETIC IRON ORES.

In the *Journal of the Franklin Institute* for February last there appears a paper on the above subject, written expressly for that periodical, by Mr. H. Fairbairn—a subject of the utmost importance to the future iron manufacture of Europe and America, as the progress towards perfection in smelting these ores holds out prospects of revolutionising the present mode of iron manufacture. The author states, that hitherto these ores have only been known, in a manufacturing view, in New Jersey and Pennsylvania; but the geology of America shows that they exist through a long range of country, from north to south, from Connecticut, through New Jersey, New York, Pennsylvania, Maryland, Virginia, South Carolina, and the south-western states, under various local names. The mountains are of primitive formation, and universally non-volcanic; the strata is, therefore, continuous and unbroken by the mechanical forces which have disturbed the stratification of so large a portion of the European countries.

These ores are the richest of all the ores of iron, not the most productive in quantity only, but the iron is of the finest quality made in the States, similar to the fine iron of Russia, Sweden, and Norway, countries situate in the same geological formations as a large portion of the state of Pennsylvania. But these valuable ores have hitherto been comparatively useless to the iron manufacturer, and Russian and Swedish iron continues to be imported, while millions of similar ores as such irons are made from lie on the granite rocks of the Lehigh. Mr. Fairbairn then shows that by the obstinate perseverance in the use of an excess of limestone in the furnaces, is to be found the continued failure in the attempts to smelt on a grand scale the magnetic iron ores. The unusual waste of iron in the puddling-furnace is owing only to the calcareous and carbonaceous concretions which remain from the excessive use of anthracite coals and limestone in the smelting process, the loss not being in metal, but of impurities which have been inserted in it, at a very considerable expense, and only to be again extracted by further great expense which attends all puddling in the United States, all through the everlasting "ton of limestone" which appears generally, in America, to be the quantity used for a ton of iron, which does not require above 7 cwts.

Besides the loss of anthracite and limestone, with all the injurious effects upon the metal which arise from their excessive use, there seems another important error in the reduction of these ores—that of the mode of filling the furnaces. These ores are of great specific gravity—probably three times heavier than anthracite coal, or limestone; and by placing it in the furnace without being broken sufficiently small, it has a tendency to fall below the coals, lime, and other ores—lying against the boshes, obstructing the blast, impeding its own reduction, and causing a great portion of the fuel to be burned away without effect. The continual chills which occur at the furnaces using any quantity of magnetic ore are probably to be traced to this mechanical cause. The remedy is to reduce the ore to a small size; in Sweden, the common dimension is that of an egg, and to fill the furnace with the ores more intimately mixed with the limestone and coals. The expense of reducing these ores to even minute dimensions by stamping machinery would be amply repaid by the facility with which they would be smelted, the greater quantity of iron a furnace would produce, and the greater duration of the brickwork. The internal form of the furnace being universally cylindrical, is another impediment, as the ores press with increased force against the walls with an imperfect curve. These, and not, as is usually asserted by proprietors of iron works, that the hot-blast is injurious, are the true causes of failure in smelting the magnetic iron ores.

By the abandonment of the present very rude and unreasonable modes of building, of filling, and of blowing the iron-furnaces of Pennsylvania, it would very soon cease to belong to the serfs of Russia to supply the finest of iron from beneath the snows of the Ural mountains to all other nations of the modern world. This occupation is probably destined to belong to the people of the United States; for all the rarest of the oxides of iron are found in the primitive mountains of the United States; and to use these treasures on some system, approaching to mechanical and chemical skill, is all that would appear to be required to the early and entire ascendancy of the iron and steel manufacture in America. The author concludes by stating that nothing can, however, secure success but the utmost economy in the manufacture of ores of the finest quality. The difference is daily becoming less in favour of any particular nation in any one pursuit of manufactures or of foreign trade. Navigation is cheapened, and more expeditious from year to year; and the freight of commodities is daily lessened over the sea. The difference in favour of the American iron manufacturer would be only the expense of conveying magnetic iron ore from the Lehigh to Scorland or to Wales.

Equality in the art of smelting iron is indispensable, in order to preserve the local advantage of the possession of the finest ores. As Scotland, with advantages so inferior, still continues to supply the lower qualities of pig-iron, so they will soon be in possession of the means to manufacture the higher varieties of iron, unless upon the rise of a more formidable opposition than at present exists in the science of iron manufacture in the United States. There is no mode now of maintaining an ascendancy, but by the skill and enterprise of nations. Geology, chemistry, and the mechanical sciences, are rapidly assisting many nations to become rich from resources which were not formerly supposed to have existence; and although the position of Pennsylvania is of such undoubted apparent magnificence amidst mineral deposits of so many valuable kinds, yet, without more rapid improvements in their use, neither the magnetic ores nor the anthracite coal-fields appear to be destined to increase very materially the wealth or the commercial ascendancy of the Republic fo the United States of America.

A memorial, addressed to the President of the Board of Trade, and signed by all the leading iron and tin-plate manufacturers in the kingdom, is about being presented, representing that the works belonging to the Governor and Company of Copper Miners of England, now carried on by the Bank of England, are being worked under a charter, protecting the Bank from any and all losses beyond the subscribed capital of the shareholders—that the *private property* of such shareholders is, by the said charter, exempt from liability in relation to the debts of such concern; whilst the capital employed, as well as the private property, of the memorialists is subjected every shilling to the liabilities incurred by the carrying on of their respective works, and which works are now being carried on notoriously at a loss—praying the interference of the board to restrain the Bank from carrying on the same.

SOUTH WALES.—The iron and coal trade of this district continues in a very depressed state, and the prices obtained are scarcely remunerative. Some hopes are entertained that the opening of the South Wales Railway, which it is said will take place in a few weeks, will have a beneficial tendency. Most of the rails are laid from Newport to Swansea, and considerable progress has been made in erecting the stations and other buildings on the line. The strongest feature which this railway now presents to the eye of the observer is the rigid parsimony which has been scrupulously adhered to in the construction of the bridges and other erections. From the Spartan-like absence of even an approximation to ornament, and the severe economy so strikingly obtruded upon the attention, there is a prevailing opinion that this line must be the cheapest ever constructed in the United Kingdom. The Vale of Neath Railway is making rapid progress in the local newspapers, although it is not yet very observable on the line. The shareholders are frequently told that their affairs are in a very properous condition, yet are glad to dispose of their shares for nothing, and upon which they have paid 10*l.* per share. Some hundreds of shares have recently changed hands on these terms. It is rumoured that it is in contemplation to construct extensive docks at Briton Ferry, the port of Neath. It is understood that the scheme has been projected, and is patronised, by the officials of the Vale of Neath Railway.

FOUNDRY CASTINGS.—We are given to understand that a company is in the course of formation, with which Mr. W. Smith, C.E., is associated, for the purpose of foundry business in London, on an extensive scale, combining the advantages attendant on connection with iron-works in the country, and that of practical experience connections in London. The plan would appear to us to be well digested, and if carried out with prudence and economy, cannot fail to be highly remunerative to the parties concerned. It will be a heavy blow on the London founders, but the prices they obtain are well known to be exorbitant, and we shall hail with pleasure any change which may tend to be of advantage to the public.

LIFE-BOAT.—A fine boat of this description, capable of holding and saving 100 persons, made of the material known as Kamptulicon, a combination of cork, India rubber, &c., may be seen at the works, in the Greenwich-road. This material is so elastic, that if a shot were sent through it, it would immediately close again, and the boat not leak.

EMPLOYMENT OF PEAT CHARCOAL IN THE ARTS.

There is, perhaps, no subject of enquiry, relating to matters of industry, which has awakened more general interest, or given rise to more sanguine expectation with regard to its influence upon the condition of a certain class of the community, at least, in Ireland, than the application of peat, on an extended scale, as fuel for domestic purposes, and in some branches of manufacture. The prominent manner in which this question has been treated by individuals, whose position is sufficiently elevated to give them credit in the eyes of the world, has probably led, in many respects, to a false conception of its true merits; at the same time, the extensive introduction of peat into use as a substitute for other descriptions of fuel, promises advantages too great to be treated of slightingly. Peat, as is pretty generally known, is a substance of vegetable origin; a substance apparently still in a state of transition, still undergoing those chemical changes which suffiecd, in the early ages of the world, to convert whole forests into the vast carbonaceous deposits encountered in certain localities, under the form of coal. The conversion of vegetable matter into peat is a process which, under favourable circumstances, such as the presence of moisture and the accumulation of the vegetable substance in large masses, seems to be constantly in progress; and immense tracts of peat are doubtlessly, at the present time, in process of formation. Peat is met with principally in damp marshy districts, on the borders of rivers, the course of which is impeded, so that their waters become partially stagnant; and particularly in the neighbourhood of the embonchure of great rivers, which flow through a low country. It is also encountered, in some cases, at a great height above the level of the sea—peat bogs existing in the elevated valleys of the Alps, and also in the mountainous regions in the north-western part of South America. In its natural state the use of peat, as fuel, is limited, both from its want of calorific power, and from its containing a large proportion of volatile matter, the odour of which is penetrating, and easily imparted to matters in its neighbourhood. When peat is, however, previously burned to charcoal, or, more properly speaking, to a kind of coke, it is converted into a fuel of most valuable character, nearly approaching, if not quite equal to, wood-charcoal, and the coke from coal, and possessing some qualities superior to either of them.

In a country where, as in England, an apparently unlimited supply of excellent fuel can always be obtained without difficulty, both for the purposes of manufacture and for domestic use, we are apt to lose sight, or to become regardless, of the advantages that may be found in the conversion of a substance like peat to a useful object; but it ought to be borne in mind, that the coal measures are probably not exhaustless; indeed, it has been publicly stated, by an unquestionable authority on such a subject, that the day when England will see the end of her coal is not so far distant as we are disposed to believe; it is therefore, even in this respect, an object of interest to see the enormous tracts of peat which cover many square miles of country, rendered available to the ends of industry, even if it were only with reference to the economising the great source of our national supremacy. With respect to the employment of peat-charcoal, there are some circumstances to be considered which serve to give it a fair title to superiority over both wood-charcoal and coke; in its application to metallurgic processes, for example, particularly in the manufacture of iron, its superiority is well marked; and in many manufacturing processes, where a continued moderate heat is requisite, this kind of fuel is very much better than either coke or wood-charcoal. The value of peat-coke, as fuel, arises from its peculiar composition, and partly from its physical character. Owing to its being somewhat friable and cavernous, it ignites readily, and, when once lighted, burns entirely away, even when in small fragments. The amount of heat it produces in burning is somewhat less than that of wood-charcoal, weight for weight; and it bears almost the same relation to coke; but it is more lasting than charcoal, and, from its chemical constitution, more suitable to metallurgic purposes than coke. Most varieties of coal contain sulphur in the form of iron pyrites, and some, sulphate of lime also, which, as well as the pyrites, is a source of sulphur, as it becomes converted into sulphuret of calcium in the process of coking. Now, in almost all metallurgic operations, the presence of sulphur is highly deleterious, as it is apt to form a combination with the metal under treatment, and so produce an injurious effect. This defect, when coke is used, attains a high pitch, unless the coke be prepared with great care and skill, so that the sulphur may be partially expelled or burned off during the process of burning; in coke prepared in retorts, or in gas making, the presence of the sulphur is an effective bar to its employment in the arts. The objection arising from the noxious influence of sulphur cannot certainly be urged against wood-charcoal; but this substance possesses, when compared with the coke from peat, a physical disadvantage—from its light porous structure it burns away with great rapidity; and (although, from its purity, well suited to almost every operation in the arts) on this account it becomes too costly to be employed, excepting under circumstances in which no substitute for it can be made by coke or other fuel. At all times charcoal must be a very costly fuel, both in consequence of the limited supply of the raw material, and from the expense of manufacture. Peat coke offers a substitute for charcoal under all circumstances, and under almost all for common coke as well. Peat seldom contains sulphur in any state; and even when that substance is present, it is in such small quantity that it is generally oxidised and expelled in the process of coking the peat.

After having been dried, peat yields, when burned, about two-thirds of its weight of coke equal to wood-charcoal; and it has been calculated that this may be produced and sold for about 35s. per ton; at which price it would compete, in the market, with coke from coal, and possess a great advantage in price over charcoal; in this case, we suppose the peat-coke to be prepared according to the present method of burning charcoal, or of making coke from coal in ovens. Peat contains, however, a certain proportion of matters having commercial value, which, being volatile, are driven off during its combustion, and, consequently, lost; these are, acetic acid, ammonia, and certain volatile oils, partaking of the nature of naphtha. Seeing that these valuable matters are lost in the process of carbonising the peat in ovens, it has been proposed to carry on the process of conversion in retorts of brick or iron, to approximate the process to the manufacture of gas from coal, or that of the extraction of acetic acid and other products from wood. This idea does not, however, with respect to peat, appear to possess much practical value; it is a question whether the quantity of the products above-named be sufficient to cover the increased expense of working—for, in the first place, the amount of peat-coke produced at each operation is reduced, inasmuch as the retorts must be limited in size; and, secondly, a great additional expense is incurred for fuel to heat the retorts, which, being closed from the air, require to be heated entirely from the outside; and, as a given quantity of peat requires the consumption of a quantity at least equal to its own bulk, to burn it into charcoal, it is clear that one-half of the charcoal from the whole will be lost; and is to be compensated for by the volatile products collected from that peat contained within the retort—the process being also in every way more laborious, and, consequently, more expensive. In the process of coking the peat in ovens, the peat burns itself; the volatile matters are certainly all lost, but every ton of peat yields its proportion of coke, which is its most valuable commercial constituent.

In the manufacture of iron, it is a question whether peat-charcoal may not be entirely substituted for every other kind of fuel with striking advantage to the manufacturer, with respect both to the quantity and quality of the iron produced. It was suggested long ago by Berthier that peat might be used with advantage in the extraction of iron from its ores; and he also hinted at the advantage that might be gained by mixing the pounded ore with the charcoal, compressing the whole into the size and form of bricks, and thus placing them in the furnace; the iron ore and carbonaceous matter would thus be brought into a degree of proximity that would probably much facilitate the reduction and fusion of the metal—at the same time that a fuel was employed incapable of producing upon the iron any injurious effect. The employment of a fuel derived immediately from the sterile bogs which cover so many thousands of acres of land otherwise available to agriculture, would be it itself an inducement to promote the introduction of peat-charcoal into more general use; but happily the benefit would be here as much to the arts adopting the innovation as to the agents of its production.—T. W. K.: *Newton's Journal.*

Mr. John Lee, F.S.A., has had the honour of submitting to his Royal Highness Prince Albert, at Buckingham Palace, his improvements in wheels and axles, wheel-tires, and breaks.

GREAT INDIAN PENINSULA RAILWAY.—At the meeting of shareholders on Monday, the report of the commitee was read and adopted. The amount of calls paid into the treasury of the East India Company up to the 1st March was stated at 120,000*l.* With respect to Mr. Chapman, the committee have decided upon abolishing the office of manager altogether.

Original Correspondence.

ON THE PURIFICATION OF COAL GAS.

SIR,—I observe a short letter in your valuable Journal of the 27th April, from Mr. F. C. Hills, in which that gentleman, referring to a mode of purifying coal gas used at Rugby by a Mr. Phillips, and published in the *Mining Journal* a short time since, lays claim to that process, and threatens the public generally with the infliction of law proceedings in the event of their employing such process. I have to remark merely upon this, that the process which Mr. Hills claims, and for which he pretends to have a patent, was really patented by me more than two years ago; and I shall certainly proceed by law against either Mr. Hills or any other person infringing the same. As a proof of which, I beg to refer you to my solicitor (Charles Holt, Esq., 14, Guildford-street), who is now engaged in an action with Mr. Phillips for the very infringement before referred to, and which I would have noticed in a manner similar to Mr. Hills, had my claim been of a similarly doubtful character to his. As it is, I appeal to the judicature of my country. RICHARD LAMING.

Isle of Dogs, Poplar, May 2.

IRON FOR RAILWAY PURPOSES.

SIR,—I have read in your paper of the 27th April a letter, signed "A Railway Man," wherein he comments, in very severe terms, on the system of puffing adopted by "one opulent ironmaster, who has not blushed to occupy the foremost position in recommending one particular make or quality of rails, and decrying those of others; and that he thinks it is high time such unprofitable correspondence was brought to a close;" and being a railway man of large calibre, he hesitates not to give the *coup de main* to all the *talents, experience,* and *practice* of all and sundries up to the present time, and does not *blush* in presenting himself as the only living oracle on this all-important subject.

Now, Sir, I would ask this "Railway Man" what are inventors to do with their inventions, but press them upon public attention in every legitimate way, until, by public voice, they are either condemned or approved? That inventors labour under great disadvantages before they can induce even those who are to be most benefitted by their inventions to make a trial is most evident; but what is so common in the history of inventions, as that those who possess the greatest merit have had to contend with the largest amount of opposition before their real worth was known? Hence appears the necessity of untiring effort on the part of every inventor in pressing his inventions upon public attention, even though it should lay him open to the venom of those who, were they to write their own epitaph, would be—"We are the men, and wisdom will die with us."

That this is an age of invention, such as the world never saw, is very obvious, and to this peculiar feature of our day is to be traced the proud pre-eminence of our happy isle; but the capability and determination to test the merits of any new invention is, I consider, equally prominent with the inventive principles. It, therefore, becomes a question—is there any real value in the particular make of rail which the "opulent ironmaster" has recommended; and has it had such trials as are sufficient to determine its real merits?

At an early part of the correspondence which has appeared in your Journal on this subject, I felt quite determined to put myself in possession of facts, as to the peculiar properties of these rails; and, having obtained information of the localities where they were on trial, I have examined them more than once, and find that those especially which are laid down at the Paddington station of the Great Western Railway, and which have been subject for about three years to the severest tests to which rails can be put, are as good as when first laid down, except two or three, which were defective when laid down, but placed there by the desire of the "opulent ironmaster," in order to determine the correctness of his own opinion as to the cause of these defects, which, I understand, he has ascertained and corrected; so that I can fully confirm the statements of Mr. Bowman, who, it would appear, had been called in officially to examine and report upon these rails, which report appeared in your paper of 8th Nov., 1849; and in all the rails of this particular make which I have examined there is no appearance of lamination or crushing, or other defects, so common to nearly every make of rails, either Staffordshire or Welsh.

The "Railway Man" is right when he says that the parties most deeply interested in this question of quality of rails are railway companies; but I would ask by what means are they to ascertain the best qualities of rails, but by a trial of the comparative durability of different descriptions of rails, under the same circumstances? That railway companies have suffered enormously from bad rails, is so notorious as to need no proof; and that a better description of rail is wanted—that is, one possessing greater durability—cannot be questioned. If these are truisms, then, Sir, any and every railway man ought to have hailed the least attempt in the right direction, instead of speaking disparagingly of one who, to say the least, has made a rail at which no man needs blush; and I think if the "Railway Man" had examined those on trial as carefully as I have done, he would have saved himself the exposure of his own ignorance, his want of candour, and his futile attempt to crush a rail, which neither he nor the enormously heavy engines of the Great Western Railway have as yet been able to effect.

The "Railway Man" must have been a very superficial reader of the correspondence which has appeared in your Journal on this subject, or he never would have charged the "opulent ironmaster" with an endeavour to establish his own rails at the expense of the Welsh rails, for in very fact such is not the case. Hear what the "opulent ironmaster" says in a letter to your Journal, Dec. 20, 1849:—"It is not against Welshmen or Englishmen I have anything to say, but against a *system* which is proving itself injurious and discreditable to all parties concerned." And pray what is this system? Why, just the one your "Railway Man" refers to, when he says—"If the attention of Welsh and Staffordshire ironmasters was directed towards the production of rails of the best possible quality, instead of trying, as I fear much the practice is, how bad a rail can be made so as not to be rejected, railway companies would have less occasion to complain." Now, this is *the* system that the "opulent ironmaster" has been all along attempting to overturn; and that, by simply stating that, if railway companies would give a fair price for their rails, they would get a good article; but if they expect that they are to get a good rail at a less cost than they can possibly be made at, they are sure to be deceived; and of this they have been apprised more than once during this rail correspondence; and it must not be overlooked that railway companies are generally guided in these matters by the candour and judgment of their officials. Whether *the* "Railway Man," with all his professed sympathy for suffering railways, has, or has not, been the advocate of cheap rails, it is for him to determine; but, from what he has said, we might augur favourably for the future, especially if he would submit to be taught what are the *only* proper constituents of a good rail. Sir John M'Neill does not appear to have escaped the censure of your "Railway Man," more than the "opulent ironmaster." He (Sir John) has evidently *depended too much on the superiority of his own judgment* in determining the weight of rails, instead of taking the very *superior judgment of the* "Railway Man," whose judgment on this point he considered final!

What a saving the railway companies would have made, had this *Solon* made his appearance some years sooner. Nothing less than *one-third* saved in *weight,* in addition to *one-third longer wear.* If the "Railway Man" has kept this surprising discovery to himself, being too diffident to puff it until now, and, at the same time, a railway man (peradventure a paid railway official), I think that the blush of shame may well mantle upon his face; if not, I would blush for him. To see a man professing concern for railway prosperity making statements so directly opposed to the plainest elements of mechanical science, to the established practice of the most eminent engineers of the day, and to the common-sense fact, that a bar of iron 1 in. square will not bear so much, or wear so long, as one which is one-third stronger, would make any man blush.

London, May 1. CIVIL ENGINEER.

GOLD IN SPAIN.

SIR,—Perhaps you may consider the following information, relative to the gold mines in Spanish Guiana, worth publishing. I extract it from a letter, dated "Los Misiones de Upata, Venezuela, Feb. 1, 1850," addressed to me by Dr. Arthur Baillie, and it may be considered supplementary to his letter, published in the *Mining Journal* of July 14, 1849:—"Last month two persons went there—viz.: to the banks of the River Yuanasi—taking with them a large iron mortar, with which they broke the loose stones (quartz). The produce of some did not repay them for their labour, but others yielded more or less gold. After a few days, the provisions being exhausted, they divided the spoil, and each had gained $12 per day, though unaccustomed to hard work. Up to this date no competent person has arrived here, to explore the interior of the country between this and British Guiana. If you can spare time, I wish you would give publicity to these *facts*; or if you know any party willing to speculate, I would be most happy to afford all information respecting the country, soil," &c "The lands are to be let at $20 per square league per annum, and I know that the Venezuelan Government would be most happy to sell any part. Humboldt, in his personal narrative, says this delta is eminently situated for an European settlement."—J. O.: *Jersey, April 25.*

GASES FROM THE BLAST-FURNACE.

SIR,—Since my last communication on this subject, the gases have been applied to several hot-blast stoves at Victoria with complete success—the only complaint being that of too great a heat when the regulators are incautiously left too open; indeed, no hot-air stove can be secure under the intense heat of the gas, unless the manager locks up the register to a certain and safe point, previously ascertained by trial.

The saving in fuel, as shown below, even at a small establishment, forms so considerable an item, that it becomes a matter of great surprise why the British ironmasters should have been so many years behind their continental neighbours in its adoption. Probably, the imperfect manner in which it has been applied—and such cases, from what has come under my own observation in Wales, and from the accounts of those who have seen it in operation abroad, are by no means few and far between—may have been the cause of this supineness; in fact, when we hear of the ridiculous notion of taking out a patent for the development of heat by the gases without effecting their combustion, and the endeavours made to carry out such a preposterous idea, it is no wonder such a valuable discovery is making slow progress in the world.

Take a blast-furnace, on the average, in 12 hours to consume 14 tons of coke, which, as the results sought for are merely comparative, we will assume to be pure carbon; out of this about 2½ tons will become absorbed in the processes of deoxidation and cementation, so that 11½ tons will remain as fuel for the blast to act upon—the result being carbonic oxide gas and nitogren. One pound of carbon, burning into carbonic acid, gives out 13,268° of heat; but 1 lb. of carbonic oxide gas furnishes by combustion only 4503°; consequently, it will require of the latter 2·946 lbs. to yield the same quantity of caloric as 1 lb. of the former; and in order to procure these 2·946 lbs. carbonic oxide gas, 1·2626 lbs. of carbon must be burnt before the blast in the furnace; so that, for every 126¼ lbs. carbon consumed, we have a source of heat in the generated gas, after leaving the furnace, equal to 100 lbs. of carbon as burnt in the ordinary manner, under boilers, &c., into carbonic acid, which is always the case when plenty of atmospheric air is admitted.

These figures give us 79·2 per cent. saved out of the original quantity of coke consumed; but, as before shown, 2½ parts out of 14 thrown into the furnace having been absorbed, the saving will come out only 65 per cent. on the whole quantity used; but as the evaporative and other calorific effects of bituminous coal is considered to be represented by that of its coke, and taking the average of coals to yield 78 per cent., and that the furnace gases are used instead of coal, as will in almost every instance be the case, it follows that, for every 100 lbs. of coke used in the furnace, sufficient gas will be generated to supply the heat afforded by 83·3 lbs. coal, having 22 per cent. of volatile and earthy matter; hence at a furnace using the above quantity, a clear weekly saving may be effected of 160 tons of coal, which, taken at the lowest estimation, amounts to upwards of 1000*l.* per annum. When coal is the fuel used to feed the furnace, a further advantage is gained by the gaseous products of distillation—they being possessed of far greater calorific powers than carbonic oxide.

In order to reap the *full* benefits as shown above, there are a few points to be attended to, which do not appear to me to have made much progress towards perfection, considering the number of years' practice had by parties on the continent; and these are, the collection of the *whole* of the gases, and the maintenance of the furnace in all its original integrity; and, secondly, the transfer of the gas, and not *flame,* from the furnace to the place where its combustion is required, and there effectually to consume it, and not pass 9-10ths of it to the top of the stack, and burn it there, to the great wonder and edification of the neighbourhood. I shall be glad to offer a few observations on this part of the subject in a future Number.

Ebbw Vale Iron-Works, May 2. GEORGE PARRY.

NORWAY COPPER SHEATHING.

SIR,—In reply to "Germanicus" in your last, it is right he should know that the Admiralty did send to the Consul-General at Christiana, as recommended by him, for samples of Norway copper sheathing, which had stood 20 years' wear in tropical and other climates, as stated in his first letter on the subject; and were disappointed at his answer, that he could not hear of any such cases, no sheathing having been made in Norway till within the last 10 years, and what was used there before having been chiefly English. At the same time, he sent two samples of Norway sheet, not distinguished for durability, and, therefore, offering no motive for analyses. If "Germanicus" could get, or tell how to get, some samples duly certified to have stood the wear he mentioned, whether Norwegian or not, I have no doubt the Admiralty would order an analysis; and, if not, I would gladly do it at my own cost, nor is it now too late. But the samples offered by him to the Admiralty, having been from the Alten Mines, instead of the Rorass before referred to by him, he could hardly expect the Admiralty to have analysed, or to purchase, the one in place of the other, particularly after the above-quoted report of the Consul-General had been so entirely at variance with his previous apprehension. If "Germanicus" were himself to write to the Consul-General, it might, without much trouble, get the discrepancy explained, and provide us with samples of the true copper.—J. PRIDEAUX: *Plymouth, May 1.*

ANTHRACITE COAL.

SIR,—The economy of fuel, and abatement of the nuisance of coal smoke—two subjects of paramount importance, the former on account of the increased and increasing extent to which steam navigation is carried on, the latter from the rapid growth of our manufacturing towns, and the extended use of machinery worked by steam—must be my apology for reverting, at this time, to the use of anthracite coal, heat, combustion, and the properties of fuel generally. It is now more than a dozen years since I first proposed to the anthracite coal proprietors the practicability of using that fuel for steam navigation, considering that it possessed some remarkable properties admirably adapted to the purpose. I will not take up your valuable space now by recapitulating the arguments in its favour which I used to advance, because great part of your readers, no doubt, are familar with them. Anthracite coal cannot be used effectually without a blast; and when required for steam-boilers, or reverberatory furnaces, the application of vapour of water is also necessary to convert its intense fixed or local heat into gaseous or volatile heat. With this object, I contrived a water-grate, known as Kymer and Leighton's patent. The use of this on board steam-vessels has been objected to, in my opinion, without any just cause. Manufactured fuel is at present in vogue on account of its close stowage, and from an idea that the requisite properties, not found together in any natural fuel, may be combined artificially. Some time ago, I formed anthracite and bituminous coals into blocks the size of bricks, by simply fusing the bitumen of the latter in a properly-regulated temperature. This fuel burnt well in a steam-boiler fire-place by draft, but was not quite free from smoke; it made a beautiful domestic fire, and answered well in a smithy forge, as also in a little furnace, something in the form of the hollow fires in tin mills. I then ascertained that any coal containing a moderate portion of bitumen may, by the proper application of heat and mechanical arrangements, be brought into a working state, so as to be moulded and compressed into a dense block of any desired form and size. This fuel, placed for a time in an oven at a higher temperature, so as to char the surface, is rendered smokeless. As a smokeless fuel, next to anthracite coal, I consider this the most economical preparation, and, being in the favourite form, can recommend it to the notice of the Lords of the Admiralty, the large steam navigation companies, &c. In spite of the mortification and disappointment I have experienced in my endeavours to introduce anthracite coal, or rather culm, into use for various manufacturing purposes, by means of Kymer and Leighton's water-grate, I feel assured that its value and importance must ultimately, through the growing intelligence and discrimination of the age, be fully appreciated. We have here combined total absence of smoke, and the greatest possible economy of fuel. Good anthracite contains from 90 to 95 per cent. of carbon in a very solid compact form. The addition of vapour of water forms gas. By means of a blast, the solid part of the fire is kept in an active state of combustion, while sufficient air is thrown in above to consume that gas; at the same time, owing to a peculiarity in the grate, no waste occurs from ash. This plan is particularly adapted to some establishments in large towns, which cause the greatest nuisance by their

smoke—as, for instance, breweries, where a great bulk of liquor is required to be brought, as quickly as possible, to the boiling point, and then suddenly checked, the use of a blast placing this quite at command.

April 27. ——— T. H. LEIGHTON.

THE VENTILATION EVIDENCE—LIFE INSURANCE.

SIR,—I would call further attention to that part of Mr. Elliot's evidence where he suggests the emergency of an inspector and a viewer coming in collision on a point of practice. I do not consider the main objections which attach to creating a system of inspection are at all affected by his remark, but it is an extremely valuable hint as to the difficulties such a system would have to encounter. The first step towards doing anything well is to appreciate fully the difficulties which may arise to be met; and I especially recommend Mr. Elliot's evidence to the notice of those sanguine theorists, who think there is nothing more required to put an end to those deplorable events, in which masters and men are alike the sufferers, but to appoint a body of men, and call them inspectors. We shall soon see what the reports nearly ready advise, and what legislative measure is to be founded on them. If the appointment of an inspection is decided, I have some views to offer—a modification of notions I advanced three years since, with the object of mitigating, as much as possible, the form of the evil. They may not be of much value, but I think it a duty of every one interested in this matter, and especially of those who are impressed with the great difficulty of the undertaking, to contribute what they can towards checking the inconsiderate advocacy of those flowing writers, who flatter the public that the appointment of Government inspectors, and the extinction of danger, will be synonymous events.

Meanwhile, believing that the interference of Government in the commercial transactions of individuals is false in principle, and knowing it has been held to be so by the soundest heads who have considered these relations; cramping and perverting enterprise, and creating new evils, without mitigating one shadow of those which it pretends to remedy; I would call the notice of proprietors, tenants, and intelligent viewers, to a legitimate mode of gaining, by private enterprise, all the objects for which State interference is requested. I see, by your advertising columns, a company has been established for insuring life against *accidents*. Believing such an undertaking would be most beneficial in both a public and private light, I some time since gave my thoughts to forming such a company; but my views were not responded to as I wished, and other matters took off my attention. The organisation appears now to have been completed by other persons, with whom I have no sort of connection, and I have, therefore, no object in advocating their plans but that of public utility. Were such a system of insurance fully introduced into mines and manufactories where life is endangered, two antagonising agencies would exist upon that footing of private interest, by which each can alone be thoroughly checked and regulated. If a Government once sets about to assist private individuals in the development of their property, and the appointment of public inspectors to look after it is neither more or less than that, the very spring of proper action and responsibility is undermined. It is like setting a functionary on a locomotive to control the engine-driver, or who, to avoid evils of wrangling, is to be entrusted with a separate handle, that he may shut off steam whenever he is wise enough to do it. Ships will not be safely navigated by incompetent captains, locomotives driven by incompetent engineers, nor collieries managed by incompetent viewers, though you should stick them all over with inspectors. The very highest element of competence, is competence to bear responsibility; all proposals which tend to weaken this are vicious in principle, and will infallibly multiply mischiefs. The one-sided advocates in your pages, who seek to carry by clamour their hobby of inspection, pass over one entire division of the subject. They dwell upon the injuries of the men; they paint pictures of scorched and blackened bodies, and of the grief of bereaved orphans and widows, and then jump to the conclusion, that these horrors are wilfully and wantonly inflicted, with full means of avoiding them, by regardless masters and a negligent Government. This is painfully vicious and incorrect, and the more so because of the harrowing nature of those sufferings which are so hard-heartedly trifled with, and used as mere rhetorical instruments for disturbing men's minds into an approval of their infallible panacea. Why do we not hear this cruel agitation introduced when storms strew our coast with wrecks and corpses? When the late dreadful explosion occurred at Hounslow, why was there no melo-dramatic appeal over the mangled victims made to Government by such agitators for the appointment of inspectors of powder-mills? Is it that the courage of the amateur philanthropist fails to face the tempest or the mill?

Those who write so much about the sufferings of the men carefully omit every allusion to their *negligence*, even though the advocate may have close before him, and in his mind, some particular instance of a colliery ventilated by some improved contrivance, yet exploding solely through such negligence. The vast majority of accidents originate with the imprudence of the men; the true title of an inspector, should be inspector, not of collieries, but of colliers. I do not say this to set men and masters at variance. There can be no baser act than to attempt to carry a purpose by setting class against class; it is not to perpetuate such a distortion, but to correct it, that I assert the constantly known fact of the mischief which individual carelessness has occasioned. The assertion of that fact brings the case to the true light in which it must be viewed. Coal mining is a dangerous occupation, where the lives of numbers are at the mercy of the heedlessness of one, and the clear object of I will not say, only the remarkably humane and high-minded masters, but even of the most mercenary and selfish, is so to regulate the workings that they may be adapted not only to the prudence of the very careful and discreet, nor to the ordinary average of caution, but to meet with safety the worst cases of rashness or regardlessness, so that even these shall not produce lamentable danger. It is the interest of all colliery owners whatever to prevent accidents if they can. We can conceive the existence of very few such brutes in this position who are, as some would represent, totally indifferent to the destruction of life, or its consequences, and inaccessible to the shock which such derangements of a man's property give to the feelings fostered by a respectable position in society. But even this, I imagine, very minute minority (represented by the inspection advocates as the majority of mine holders) will be affected by considerations of self-interest, and have constantly before them the large pecuniary risk which must be incurred by wilfully maintaining a colliery in an explosive condition.

What we have to consider is, that all things which men have to do are done differently, according to variety of character and capacity in the individual. One succeeds in a business where another becomes a bankrupt; both equally desire success, but both have not equally the requisites for it. A bankruptcy may produce great distress to multitudes, but it is not, therefore, the business of Government to appoint inspectors to prevent bankruptcy, for the benefit of the deficient at the expense of the more gifted. We must all be accounted for our own acts; let the consequences of these, especially in the event of any impropriety, be made as severe as possible, to deter and stimulate, but it will never answer to weaken the springs of action by dividing and transferring responsibility. Those who are *wilfully* deficient in their colliery management must meet the consequences of it, which are obvious and imminent; it is manifestly unfair to put them to nurse under Government inspectors, at the cost of the community.

It is with the view of adding to the stringent motives of this class, that I think the mass of proprietors owning mines, and the most respectable tenants working them, would carry out a public benefit by promoting a system of life assurance against the accidents to which miners are liable. The company's agents would be the inspectors; where a mine was notoriously ill conducted, or inspection refused, the benefit of insurance would be denied, giving a mark of disadvantage which no owner could continue to bear. Mines notorious for their excellent arrangements would, on the contrary, have the advantage of a reduction of premium. Motives would be brought into play of a lively character far different from the dull routine of a Government inspection, where the inspector could have no sort of positive motive or stimulus, except to keep things going on in that sort of ambiguous state which might perpetuate the necessity of his vocation.

Where an accident occurred through some gross impropriety, which warranted the resistance of the payment of insurance, the evidence would be investigated before the regular legal tribunals, without fear or favour; and if those black cases appeared which we are told exist, where the men are destroyed by the wantonness of the master, the representatives of the assured would have their remedy against him for the amount of insurance, which his culpable act had exonerated the insurance company from paying. These are mere hints, the details would require much time and attention to work out; but I am convinced the adoption of such life insurance would introduce a sound and lively principle, where duty and interest would unite and stimulate to every *possible* degree of improvement. The annual payment to secure 100*l.* to each man in the event of a casualty, is far less than what is now usually deducted to meet the contingency of medical attendance being required. What do the advocates of inspection say to the say to the late tremendous explosion in Belgium? Why was not that averted by the system?—DAVID MUSHET: *April* 16.

PATENT LAW AND PATENT RIGHT.

SIR,—Having now read your series of papers on this subject, I must conclude your author's intention was to place every detail in a wrong point of view, as a Chinese puzzle is thrown into inextricable confusion, to supply the occupation of reducing the elementsaga in into intelligible order. The question being of more value than an amusement, I must try my ingenuity on his enigma, and attempt something towards re-arranging the chaotic members. To disentangle all the cross purposes in which they are cleverly involved, would be interminable; I shall only seek a few first principles, as a clue to lead us through the labyrinth. The main arguments in these papers refer to the rights of inventors, and to the rights (so called) of the public. These are supposed to be inimical, and the latter sacrificed to the former. Any theory more entirely contradicted by fact than this position can hardly be assumed—it can exist only in the absence of inquiry or definition as to their respective rights. A good deal of matter irrelevant to patent right has been mixed up with it, as, for instance, an alleged abuse in the distribution of the proceeds of patent fees. This has no bearing on the *rights* of patentees. It is a question of the misappropriation of revenue: *if* diverted in improper gratuities to officers otherwise adequately paid; that is no part of *patent law*, but a malversation in financial economy, very likely, if it exists, to meet with notice at this time, when competing parties outbid each other in retrenchment. So long as an inventor gets his patent on payment of a certain sum, its validity is no way affected by the fate of the money which leaves his hands. These extraneous considerations perplex the main object. Your author's foundation for advocating a change in the patent law, is the change that has taken place in trade and commerce since the Act of James I. I agree with this fact, but diametrically oppose the deductions he derives from it, as to the changes which are required in the law. Your author's grand error is an impression that patent right deprives the community at large, for the benefit of an individual. Such an imputation as this *may* be made, and *has* been made, against all rights of property. *La propriete ce'st la vol*, is the socialist maxim; but even in this extended philanthropic sense, the patentee is, of all proprietors, most exempted from complaint, because the property he has is one not acquired, nor appropriated, but absolutely created. It is a new addition to the stock of property, never before in any other hands, and, therefore, must defy even the *bonnet rouge* to clamour, "my loss is your gain."

In order to correct the false arguments advanced upon this Act of James the First, it may be well to go back a little further, and trace its origin, and the history of previously existing patent right. There had been an arbitrary custom with preceding monarchs to confer upon favourites gratuities or rewards in the shape of patents or monopolies. These were often of the most oppressively unjust character. They had no reference to any title, merit, ability, or invention on the part of the grantee; the patent was solely an act of power, bestowing on the favourite exclusive possession of very frequently some branch of trade, to which others had a clear right. The very necessaries of life were not exempted from these arbitrary privileges, which really *were* robberies of the public for the advantage of an individual. Prices were enhanced, and the greatest abuses resulted from the unjust partiality. As a barrier to these abuses, and to define the true foundaries of privilege, the Act in question was passed.

The spirit of the Act is to debar the Crown from granting to an individual what already is the property of the public, and, on the other hand, to prevent the public from appropriating that which already is a man's own. The latter has been by far the most difficult achievement. The Act was especially called for at that time, because the dawn of the present day of physical science, and the increase of wealth, population, and commercial pursuits, had already directed attention to the resources of the material world, and novelties decidedly due to their inventors had been arbitrarily bestowed on strangers. This danger is passed away, and that part of the enactment which *now* requires to be strengthened, is to guard the inventor against arbitrary assumptions, not by the Crown, but by the public. One of the first grants, under the new Act, forming an epoch for our present era of manufacturing greatness, was the exclusive privilege to Dudley of smelting iron with pit coal, granted in conformity with its provisions, "at the sole hazard of the petitioner, whether such invention will have the desired success." He had the honour, at least, of encountering this hazard to the full, and of being the prototype of future patentees, his improvement meeting with the determined opposition and vengeance of those already embarked in the existing mode of manufacture—that *public* which your author so pervertedly represents as lying, weak and defenceless, at the mercy of the over-privileged patentee. Since this period, physical science has so enormously developed the resources of the material world, that patent rights are no longer occasional grants, few and far between, but they are interwoven through the whole mass of our commercial industry, and form a large and important item in the aggregate bulk. The consequent change that is required is increased protection for this new property, commensurate with its importance; not, as your author suggests, the deprival of that amount of protection which it already possesses.

The original Act requires, *if* it is changed, to be expanded on its own principles to that advanced condition of which it has been the parent. Had it at *that* time been proposed to refer the decision on the merit and remuneration of patentees to a public board, the task, however, unsound in principle, might, at least, have come within the compass of possibility; but *now*, when the claims of patentees are multiplied and subdivided a thousandfold, when or how is the board to be constituted, that shall decipher their respective titles to compensation? Your author heaps Pelion on Ossa before the footsteps of his commissioners, by further objecting to the grant of patents as a *matter of course*, at the sole hazard of the patentee as to its novelty or success; the board is to undertake an inquiry into the *prospective merits* of an invention before the title is admitted. If we wish to constitute "commissioners of impossibilities," these must be the men; and how will the inventor fare? His head filled with plans, of which in their full bearing, until he puts them adequately to experiment, he can even himself form a very imperfect and precarious judgment, and *secresy* being an important element to his success, he is to be taxed with the cost and exposure of bringing evidence before a commission, as a preliminary step, before he is even placed on the threshold of his *real difficulties*, which then, as now, will begin from the moment he receives a grant securing to himself all benefit that *may* accrue from his undertaking, if he succeeds in making it what he *believes* it to be; can prevail on some to adopt it *with* payment; or hinder others from appropriating it *without*. Besides the practical injustice, consider the abstract absurdity of compelling a man to prove the value of his own ideas, before he is entitled to the use of them. It is a monstrosity of imagination, and who could condescend to submit to it. It would be less to an inventor's cost, and equally to his benefit, to publish his notions by advertisement in the *Times* newspaper, for the service of all whom they may concern. In short, instead of practice being the test of theory, theory is to dictate practice, and annihilate the very principles of progress in invention. And, on the point of remuneration; the board must either decide what an invention *promises* to be worth prospectively, or they must decide after a term of trial what it *has been* worth. The first of these plans is involved in the investigation I have just contemplated; the second is, indeed, gilding refined gold, and adding fresh perfume to the bed of sweets on which inventors already are reposing. Who would embark time, toil, thought, and an unknown amount of outlay in perfecting something which holds before him no other prospect, but that at the end of a series of years, he may have the unspeakable felicity of incurring an additional enterprise to advance his merits before ineffable judges, who may or may not condescend to think his labours are deserving of some payment. What a substitute is this for the sound and simple grant of the benefit an invention yields, provided it *proves* to be new. It is the interest of the patentee far more than it can be of any one else, to examine the intrinsic foundation of his grant, and satisfy *himself* that it is good in principle, and novel in idea, before wasting time and means upon it. If it is new and useful, it is his own, and the public has no business with it. If it is useful, but not new, the public steps into it, and he loses his pains. If it is neither new nor useful, or if it is new and useless, it is as useless to the public as to himself, so that the public can in no case suffer; all loss is *his* alone, upon a chance of gain. He knows he is surrounded by sharks and pirates (are these "the public?"), ready to use the slightest approximation to want of a novelty, to avoid his rights, when *they prove of value*.

In his very novelty, he finds another shoal of danger. Novel ideas lead to novel consequences; he is thrown upon the utmost stretch of foresight to imagine the probable and further results of his own thoughts, that he may include them in his specification, and defend the parent invention from being destroyed by its own offspring. Your author has a very singular view of the facility of drawing a specification. There is no right in such constant jeopardy as an inventor's; it is the interest of no one to examine his position more narrowly, spurred to it on every side. In the mass of fallacies advanced in these papers, none is more groundless than the assumption of his private right being a public injury. I challenge the production of an instance where the public has been so injured; on the contrary, it revels in an amount of benefit at the cost of inventors, which is incalculable.

The public, as against a patentee, may be divided into two classes.—First, the makers of those articles affected by the patent improvement, or substitution; and, secondly, the consumers of them. By improved quality or economy, or by a substitution, the previous possessors of the market may lose; but if this is to be an argument against patent right, it will argue against all improvements; railways should long since have been put down for their damage to old towns, hotels, and turnpike trusts. Your author would give the *monopoly* to that "public" which owns the costly and inferior article, and deprive the other "public" of the privilege of advancement. It has to be proved that any man will devote time and talents that are of any value to what gives him no chance of remuneration. They are very exceptional cases, indeed, where any one can labour for the public good in total disregard of his own interests; but even such rare labours as these ought to be prohibited, if the "making public" is to be paramount; *they* are equally disturbed, whether the improvement is introduced through self-interest or magnanimous generosity. The more the value of patent right is enhanced, the greater prospect is there that a superior range of abilities will be dedicated to invention and improvement. These result in the ultimate advantage of the "consuming public," which is the real public to be considered, and not the "making public." Will a farmer improve land at a great outlay for an incoming tenant to reap the crops? A patent right resembles a building lease, where a spot is granted for a term, that the lessee may expend for his immediate advantage what ultimately benefits the proprietor. The State grants in a patent a *locus standi*, where the inventor has leave to create a property which ultimately swells the common stock. DAVID MUSHET.

[*To be concluded in next week's Mining Journal.*]

THE PATENT LAWS AND TREATIES OF COMMERCE.

SIR,—In the *Mining Journal* of 13th inst. a correspondent, who signs himself "Constant Reader," disputes the accuracy of my statement as to the proportion accruing to the public treasury from the amount payable on patent grants, and requires me to verify that statement; this I will do, as far as I am able, and as I have only one motive, which is to place every thing on a right footing, I shall be pleased to see any party investigating the subject in a *bonâ fide* manner, although I am not so violently opposed to the Attorney-General's *verification* as regards patents as "Constant Reader" may be—simply because no better system has yet been suggested.

On the *English Patent* the 62*l.* to the public treasury is made out thus:—Stamp on patent, 30*l.*; stamps on Queen's bill, Signet bill, and Privy Seal bill, 6*l.*; Home Office fees—viz., reference, 2*l.* 2*s.* 6*d.*; Queen's warrant, 9*l.* 1*s.*; Queen's bill, 9*l.* 1*s.*; Signet and Privy Seal Offices, &c., proportion of fees from the abolished clerkships, &c., about 6*l.*

On the *Scotch Patent*—Home Office for reference, 2*l.* 2*s.* 6*d.*; warrant, 16*l.* 17*s.*; other fees, about 6*l.*

On the *Irish Patent*—Stamp duty on patent, 30*l.*; and at the Home Office for Queen's letter, &c., about 20*l.*

These calculations are made in round numbers, so that I will not bind myself that the amount may not be a pound or so, either under or over, as it is difficult to get information as to the exact amount on some parts of the proceedings, but I am quite sure the calculation is right in the main.

I take this opportunity of reiterating my protest against any *organic* change, if I may so speak, in the patent system, although I should rejoice to see it placed on a more equitable footing, both as regards the inventor and the public; but any one who considers that this country has attained pre-eminence and opulence under a well established patent system, will, if they have *mens sana* in *sano corpore*, be very loth to attack the vital parts of that system—abandoning that to destruction which, although far from being perfect, has yet done, and is still doing, much good service to the state, to seek after uncertain novelties; indeed, the well-judging will rather seek to improve and strengthen what we are already in possession of. The evils that would flow from the system of granting patents, lately proposed in the *Mining Journal*, are so great, that no experienced political economist should entertain the idea for a moment (for the exposition of these evils I would refer to the able paper of "T. T.," in the *Mining Journal* of 16th March last). Patent reformers cannot do better than support the recommendations of the Signet and Privy Seal Committee, whose report was presented to the House of Commons on the 30th January, 1849.

By the change therein proposed, the public are to be protected by the advertising of every patent before its being issued, and by the patentee being fixed immediately upon application by the deposit of a memorandum specification, and by a sum of some magnitude being levied upon patents. The patentee is to be protected by security from the day of application, and by access to classified and authentic indices of former patents, and is to obtain his patent for a much less sum than at present, although not a small sum. I am of opinion that inventors should support this system, with a few additional amendments, and have prepared a petition to the House of Commons to that effect, and now send you a copy of it.

Patent Office, Strand, April 24. ——— F. W. CAMPIN.

To the Honourable the Commons of Great Britain, &c.

The humble petition of FREDERICK WILLIAM CAMPIN, of No. 210, Strand, in the county of Middlesex, and the undersigned parties, interested in the operation of the Patent Laws:—

SHEWETH,—That your petitioners would humbly represent to your hon House that the law and practice in regard to granting letters patent for inventions, and the law and practice in regard to registering designs, now in force, are such as to entail inconvenience on all inventors, and great hardships on those of small pecuniary means (and they are the majority), with regard to securing the property in their new improvements in the arts and manufactures. That many of the defects now existing are set forth in the report of a committee appointed by her Majesty's Government to inquire into the Privy Seal and Signet Offices, dated 30th January, 1849, and presented to your hon. House by her Majesty's command.

Your petitioners, therefore, humbly pray that your hon. House would provide that the following amendments, recommended by the said committee in their said report, be carried out forthwith—viz.:

1. That a patent, when granted, take its date from the day of application, instead of, as at present, from the day on which the patent is sealed.
2. That a memorandum specification, or outline description, be deposited in every case at the time of making the application for a patent.
3. That a properly classified index be kept of the specifications of patents already enrolled and those hereafter enrolled.
4. And the recommendations generally of the said committee.

Your petitioners would further earnestly solicit, that, in carrying the above recommendations into effect, no greater fee be required to be paid at the time of making application for a patent than is now paid, up to what is termed "the report" (even though large fees should be required at the time of completing the patent, which time might be limited to that allowed for the enrolment of the specification in full—say, nine months from the application)—as any greater sum than as aforesaid, *payable before protection* is ensured, would prove almost as great a bar to inventors of small pecuniary means as the present system; and, further, that the patents for England, Ireland, and Scotland, be sued out on ONE PETITION, instead of three petitions, as now.

That in addition to these amendments, it may be provided with regard to patents, as it is now provided with regard to registered designs, under Act 5 and 6 Vic., cap. 100, that if any party shall surreptitiously obtain the invention of another, and patent it before him, the Court of Chancery may order the transfer, or alteration, of the patent, and record to the true inventor—the Queen's warrant being obtained for that purpose.

That with regard to the legal protection of patent rights, it be provided that the patentee may prosecute for a penalty before the ordinary magistrates in respect to any infringement, if he so elect, like as a proprietor of a registered design can do under the said Act 5 and 6 Vic., cap. 100; and, further, that the courts having jurisdiction in patent and designs cases may have the power of referring the inquiry as to the novelty and utility of any patented invention or registered design to the decision of a commission of scientific and practical men, whose decision shall not be final, except at the discretion of the court—and thus the same assistance be obtained in patent cases as is now given to the judge of the Admiralty Court in maritime cases, by the assistance of the Brethren of the Trinity House.

That caveats be allowed against designs being registered, without notice to the caveatees. And your petitioners will ever pray, &c.

EUDIOMETERS FOR MINES.

SIR,—The advantages which would result from the use of eudiometers in mines are obviously very great, inasmuch as the presence and quantity of fire-damp, and other noxious gases, might thereby be approximately ascertained, and the proper remedies resorted to in the event of any sudden or permanent increase. The quantity of air admitted into the best ventilated mines is at present undetermined by any fixed rules deduced from observed facts, nor does there appear to be any other mode of deciding upon the amount of ventilation absolutely required, than by guessing it, or following the example pursued in a neighbouring colliery. In some fiery pits attempts have been made to ascertain the quantities of fire-damp which is given out in a certain time, and the ventilation has been increased in consequence of an augmented quantity having been observed. Were there any simple and ready means of frequently making such observations, it would most materially tend to an improved practice in mine ventilation. The eudiometers of Dalton, Davy, Berthollet, Guyton, Hope, and other chemists, are by far too delicate in construction, and require too much nicety in observation, ever to become popular or useful instruments with the miner. If Dr. Murray, or any other of your ingenious and scientific correspondents, would direct their attention to this subject, with the view of discovering some simple and portable instrument, easily applicable and unmistakeable in its indications, they would confer a great benefit on the managers of mines, and materially advance the improvement of colliery ventilation.—J. RICHARDSON, C.E.: *Neath, April* 29.

THE WIRE-ROPE CONDUCTOR.

SIR,—It was entirely on theoretic grounds that I formed an opinion adverse to the "wire-rope" conductor. Since the report of the Naval Commissioners, January 24, 1840, H.M. ships *Bittern* and *Hazard* were fitted with *wire-rope conductors*. The lightning fell, and did very considerable damage—shivering in the one the royal mast, and knocking down eight men; and in the other shivering the mast, topmast, &c. These were what I alluded to in my last communication. They *appear to me* condemnatory of the "wire-rope" as a lightning conductor, and amply confirm my deductions.—J. MURRAY: *Portland-place, Hull, April* 29.

THE SUSPENSION BRIDGE.

SIR,—The recent catastrophe of the fall of a wire suspension bridge near Angers, by the passage of part of a battalion of the 11th Light Infantry of France, and by which a loss was sustained of 282 persons, who perished in the Loire, may well awaken suspicion in the security of such structures. The French seem unfortunate in this way. If I remember right, the first suspension bridge which was erected in France, and projected over the Seine, fell into the river soon after its being erected. The common wire suspension bridge seems to me very faulty, and dangerous from its vibrations. I passed over one a short time ago, and even by my solitary transit its vibrations were considerable.

I frankly confess that it seems sufficiently evident to me that Mr. Dredge's suspension bridge is entirely secure, because founded on the immutable laws of Nature. The principle is simple—that of the bracket. The leaf of the forest contains its elements—the tapering suspender in the midrib, and the diagonal bracings of the ravines. In crossing Mr. Dredge's suspension bridges, I have often remarked their entire freedom from vibration, and some of these have been severely tested. J. MURRAY.

Portland-place, Hull, April 29.

ELECTRIC STORMS.

SIR,—The recent hailstorm at Dublin, though of short duration, seems to have been very destructive in its effects. I believe the damage sustained has been estimated at 27,000*l*. The paragrêle, as its name imports, is a security against the hailstorm, either by preventing its formation altogether, or the precipitation of hail. Sometimes the hailstones have been resolved into *snow*, while a circumvallation of hailstones has surrounded the vineyard, protected by paragrêles. A gentleman, several years ago, at Bridgnorth, was induced, on my recommendation, to erect the paragrêle at one end of his premises; and he informed me, as a curious fact, that, during a hailstorm, which followed soon after its erection, *no hail* fell there; while there was a considerable fall of hailstones at the other extremity of the range of buildings, which, if I remember right, did some damage.

It would appear that the Cathedral of Saragossa was entirely destroyed by lightning on the 7th instant. The lightning fell on the tower, and the edifice was speedily in flames and burnt to the ground. This superb building was one of the noblest erections of Arragon. On the continent, public edifices are very generally supplied with *iron* conductors; and it *may* have been the case here. Some years ago, the powder magazine at Bayonne was destroyed by lightning, though supplied with *iron* conductors.

It is sometimes the practice—a very dangerous custom—to ring bells during a thunder-storm on the continent; and it would appear to have been the case in the instance of the Cathedral of Saragossa; for the bell-ringer was precipitated lifeless from the tower. Some years ago, four persons were killed in the bell tower during a thunder-storm at Carcashene, in France, being engaged in this superstitious and perilous act.

Portland-place, Hull, April 30. ——— J. MURRAY.

WATERS HOLDING CARBONIC ACID IN SOLUTION.

SIR,—I confess I have a high opinion of waters holding carbonic acid gas in solution. Such seem to me to promote digestion, and may prove serviceable as mild stimuli. It is quite true that, apart from solution, and in a gaseous form, carbonic acid acts as a narcotic poison on the brain; but the circumstances are very different. In the former case, the gas in solution is conveyed into the stomach; while in the latter substance it enters the lungs, and pervades the circulation, &c. Thus, too, "sulphuretted waters" are sanitary in disease, while sulphuretted-hydrogen is a malignant septic poison.

In the Bath waters, which are *thermal*, the carbonated water, in consequence of the elevated temperature, sometimes affects the head, and produces giddiness. In my work on *Pulmonary Consumption*, wherein I recommend a *generous* diet (as appears to me so essential in a disease confessedly of debility), with the occasional use of *porter*, I am of opinion that the "froth" is of no mean value, from the carbonic acid gas it contains.

Referring to the experiment already detailed, relative to the act of fermentation, and the influence which carbonic acid gas seems to possess in checking a tendency to acidity, and seeing that in dyspepsia there is a tendency to acidity, carbonic acid gas may counteract such predisposition; and considering, moreover, that carbonic acid renders *insoluble* phosphates soluble, when alone they can be appropriated and assimilated, the phosphates of the food may, by carbonic acid gas, in the form of beverage, be rendered available by the functions of digestion. J. MURRAY.

Portland-place, Hull, April 30.

NEW METHOD OF GILDING PORCELAIN.—M. Grenon, decorator of porcelain, of Rue de Faubourg, St. Martin, Paris, submitted to the Society for the Encouragement of National Industry, Paris, an improvement in gilding porcelain, which adds much to its durability. The operation of gilding, as generally practised, consists, as is well known, in mixing with the preparation of gold and protonitrate of mercury, a certain quantity of subnitrate of bismuth, which serves as a flux, and allows the metal to be burnt into the porcelain. The gold prepared by nitrate of mercury, may be applied in extremely thin layers, so that this process will be very economical; it is, however, not very durable. Gold, obtained by sulphate of protoxide of iron, furnishes a more solid, although less economic, gilding. Different processes have been employed for rendering gilding more durable without increasing the expense. M. Rousseau's method is, first to lay a coating of platina, mixed with flux, and then a thin coating of gold upon the platina. This gives a solid gilding, but it is apt to lose its lustre by use—the colour of the gold being modified by that of the platina, which appears when the gold wears away. M. Grenon's process consists in the successive application of two layers of gold, each having a special flux, and in different proportions. The first layer is first burnt in at a high temperature, after which it is polished with rotten-stone, and on it is laid a thin coating of mercury-gold, which is prepared and burnt in the ordinary manner. This gilding is easily burnished, and takes a fine polish; and it has been proved that friction from hard bodies, which would seriously injure ordinary gilding, does not affect it. M. Grenon's method merits attention from the public on account of its solidity and brilliancy; the increase in price (which is not very considerable) being justified by the quantity of gold employed, and the double expenses of laying-on and burning.

Mr. Don, of the Swinton Iron-Works, having unfortunately to appear before Mr. Commissioner West, at the Leeds Bankruptcy Court, has received a first-class certificate.

HISTORY AND MANUFACTURE OF GUNPOWDER.—No. IV.

BY JOHN JOSEPH LAKE, OF THE ORDNANCE DEPARTMENT.

Sulphur, the third ingredient in gunpowder, is one of the simple non-metallic elements—not that it is actually a simple substance, but it is classed among them, because at present we know of no means of treating it by which we can decompose it. It is found in an uncombined state in nature. In Sicily, whence we get our principal supplies, it is found in vast beds. It has to be purified before it is used for gunpowder, on account of earthy and other matters being mixed with it, which are got rid of in two ways—sublimation and melting. Many private manufacturers adopt the former method, but Government employs the latter. By the one the sulphur vapourising at 170°, leaves all the impurities behind, and by the other process the heavier matters sink to the bottom, whilst the lighter ones rise to the top, leaving the intermediate portion pure. Though sulphur is used in making gunpowder, it is not necessary as far as the explosive force is concerned. The only essential ingredients are charcoal and saltpetre. The use of sulphur is to give solidity to the mass, and for this purpose it is remarkably well adapted.

The three ingredients being purified, and reduced to a very fine powder, are weighed out in their proper proportions, which will be given hereafter. They are then put into a charge tub in alternate layers—first, charcoal, then sulphur, next another layer of charcoal, then a layer of saltpetre, and so on. The greater the number of these layers the better, and they ought to bear as nearly as possible the same proportion to each other as the three quantities do when weighed for the charge; for by this the intimate mixture of the ingredients is more readily effected. To the cover of the charge tub is fixed an eight-pronged wooden instrument, worked by a handle at top, with which the materials are mixed. They are then passed through a fine brass wire sieve and wooden hopper or funnel into another tub, and again stirred as before. Other methods have been adopted, but this is found to be one of the best. The ingredients thus mixed are carried to the powder-mill, usually a brick building with a boarded roof, in which is fixed a large trough, with a cast-iron or stone bed, and on this two millstones, weighing between 3 and 4 tons each, revolve. The mixture is spread as equally and carefully as possible on the bed. The dust that may have flown off during this operation is then carefully swept from the stones, wheels, and curb. The charge is levelled by several revolutions of the stones, after which it is sprinkled with a little cold water from a copper watering-pot. The quantity of moisture added depends upon the state of the millstones, whether they are dry or moist, for they are greatly affected by the hygrometrical state of the air. This can only be regulated by the judgment and experience of the attendant, for the mixture must not be made into a paste. Manufacturers are forbidden by law to put more than 42 lbs. of the ingredients to the mill at a time, on account of the danger of explosion, which is, however, somewhat lessened by the moisture applied. The strength of the powder depends much upon the rapidity of revolution of the millstones, as well as the length of time the mixture is exposed to trituration; for with a velocity of 7½ revolutions per minute applied for three hours, powder has been obtained of equal strength with other charges worked for five hours, with a velocity of 4½ revolutions a minute. Three hours are, however, as a guide adopted for the average time; but it is a matter that must be left entirely to the judgment of the millman, for when the charge may be thought nearly ready, an unexpected change may appear, that will render further working necessary, for the state of the atmosphere, as already observed, materially affects the process. When it has been worked enough, it assumes a peculiar plasticity, and, in the workmen's language, is said to be *alive*. In this state it glides from beneath the stones, without attaching itself to them, and is conveyed to the press-room. At this stage of the business a sample is taken, which is granulated in a hand engine, and dried for proof. In the press-room the millcake, as it is now called, is laid in the press, in layers 3 in. thick (a copper plate being between each layer), until the press is full, and submitted to pressure, either by the screw and capstan, or Bramah's hydrostatic engine; about 400 lbs. is the quantity usually pressed at one time.

In the early manufacture of gunpowder pressure was not employed, and it is found to diminish the projectile force of the composition, the reason of which appears to be that the combustion, or ignition, of the powder is impeded by the greater firmness of the grain in pressed powder. But the advantages gained by a moderate pressure more than compensate for the deficiency of range, which can be remedied by adding a little more to the charge; for by having the grains compact and firm, the powder is less exposed to deterioration from moisture and transport. The cake, now called *pressed cake*, having stopped the proper time in the press, which also depends much upon the state of the atmosphere, is taken out and broken with a wooden maul, and then in a breaking-trough, further broken up with mallets into pieces about the size of peas, and put into the corning or graining sieves, each of which contains two discs of lignum vitæ, which, by the circular motion communicated to them, still further reduce the size of the pieces, until they pass through the holes in the sieve in small grains into another sieve placed below, which again only allows the minutest dust to pass through into a trough. After the whole of the cake is thus granulated, the grains are put into separating sieves, the holes in which act as gauges, and prevent all irregular and improper-sized pieces passing through. The drying process to which the powder has now to be submitted is usually conducted in small rooms, called stores, heated by steam. Small quantities of the powder are put into little trays 1½ inch deep, which are placed upon racks, and the temperature raised to about 100° Fahr. The powder is exposed to this for about 36 hours; it is then passed through a sieve, consisting of two inclined planes, covered with fine brass wire, by which the powder is cooled, and any dust formed during the drying is separated.

Lieut. Bishop proposed to expose gunpowder, at the last stage of its manufacture, to a heat of 500° Fahr., by which he assumed that the sulphur and saltpelre would melt, and envelope the charcoal, as with a coat. Setting aside the great danger of the operation, the theory is incorrect; for the sulphur would separate from the mixture long before it arrived at that temperature, and the saltpetre does not melt under 616° Fahr., whilst the explosive point of gunpowder is 600°.

The next operation is glazing, which is performed by placing the powder in reels, covered with lawn, or canvass, of such a kind as will admit of the dust, and very small grains passing through. These reels are cylindrical, and being made to revolve with considerable velocity, the powder is glazed by the friction to which it is thus exposed, and which is continued for about half an hour. The different-sized grains are now separated from each other by sieves of different gauges into large and fine grain powder. The large is appropriated for ordnance—the other for all small arms, except rifles, for which a kind, called *rifle-arm* powder, is elaborated at more expense, and with greater care. Powder for fowling-pieces is still finer than that used by Government for small arms. The purpose for which large-grained powder is used for cannon is to decrease the rapidity of ignition. When great weights are projected, large quantities of powder are employed, and the large-grained kind is found to accomplish the greatest distance. The powder used for priming the ancient matchlocks was merely dust. It was called *serpentine* powder, from the *serpentine*, the part of the lock that held the match.—*Portsmouth, April* 30.

NEW COATING FOR CAST-IRON.—Mr. W. Wyatt, of Oldswinford, has recently patented some improvements in coating the surfaces of pumps, pipes, cisterns, and other articles of iron, which consists in coating the surfaces of articles made of cast-iron, with a glass or glaze, prepared as follows:—Three parts, by weight, of white-lead, or one part red-lead, or two parts white-lead; two parts of borax, and one part of calcined flint, are heated to a temperature sufficiently high to fuse them, and then run into water (by preference although not absolutely necessary), after which they are ground in a glaze mill to the consistency of cream. If the inside of the article is to be coated, then all openings are closed except one, through which a quantity of glaze is introduced. A rotary motion is then given to it, in order to cause the glaze to adhere to every part. If it is the exterior that is to be coated, it is brushed over with, or dipped in a bath of glaze. In either case, the surplus glaze is allowed to run off. The article, thus coated, is lastly placed in a kiln, but in such manner that no part of the glaze furnaces shall be exposed to the action of flame or sulphur, and heated until the glaze melts (which can be easily ascertained by removing a brick from the kiln). When this occurs, the kiln and its contents are allowed to cool until the glaze is set, and adheres firmly to the surfaces of the articles to which it has been applied.—*Claim*: Coating with a glaze, such as herein explained, cast-iron pumps, cast-iron pipes, cast-iron cisterns, and other articles of cast-iron.

SOUTH WALES RAILWAY.—The works are proceeding rapidly, and it is expected that a single line of rails will be completed between Chepstow and Swansea about the 10th of next month, and that this portion of the line will be ready for traffic early in July next.

THE ELECTRO-CHEMICAL TELEGRAPH.—An experiment has been made at the Elysée, by order of the President of the Republic, of the electro-chymical telegraph of Mr. Bain. The telegraph was fixed up in the grand saloon of the Palace, and soon after 1 o'clock the experiments commenced. Mr. Bain, the inventor, was accompanied by Mr. MacDougall, by M. Walkinshaw, and by Dr. Lardner. The President was attended by the Minister of the Interior, his *chef du cabinet*, and M. Chevalier, Secretary-General of the Presidency. M. de Percigny, the French Ambassador of the Court of Berlin, was also present. M. Leverrier, of the Institute, who has taken great interest in the invention of Mr. Bain, and who was present on Thursday at the Ministry of the Interior, when the telegraph conveyed a long despatch to Lille and back, a distance of 325 English miles, in less than one minute, explained the process to the President of the Republic. The Prince comprehended rapidly the principle and the mode of execution, which he said were almost marvellous, and complimented Mr. Bain on the labour and intelligence which he had displayed in bringing his invention to such perfection. As an instance of the extraordinary powers of this telegraph, we may mention that, in the presence of the President of the Republic, a dispatch containing 4327 letters was conveyed in the space of 55 seconds, being at the rate of nearly 1500 letters per minute.—*Galignani's Mes.*

IMPROVEMENTS IN ELECTRIC TELEGRAPH BATTERIES.—In most of the electric telegraph establishments, are batteries formed of zinc, copper, and sand, moistened with dilute sulphuric acid—this sand being strongly pressed between the metallic plates. These batteries, however much an improvement over those formerly employed, possess the great disadvantage of diminishing in force, requiring the frequent application of the dilute acid, and a complete removal once in every four or six weeks. M. W. Eisenlohr, the superintendent of the electric telegraphs in the Grand Duchy of Baden, has for some time past endeavoured to find out some method of rendering the battery more constant in its action, and at the same time less liable to the carelessness of the workmen, who sometimes put too much acid, and at other times leave the battery quite dry, thus producing a great interruption in the working of the telegraph. After various experiments on the subject, M. Eisenlohr found that the employment of a solution of bitartrate of potash, in acidulated water, for the zinc couples of a Daniell's battery, and of a moderately concentrated solution of sulphate of copper, for the copper element, fully and effectually answered the desired object. This battery was found to possess a most remarkable constancy. M. E. Wartmann, in speaking of this new battery in the last number of the *Bibliotheque Universale* of Geneva, states that he has made use of a Daniell's battery of ten couples, charged on M. Eisenlohr's system, but placing the zinc couples in acidulated water, and the copper in a solution of bitartrate of potash, and that the battery, which remained in action for three weeks, without any interruption, exhibited the most perfect constancy.

EXPLOSION OF LOCOMOTIVES IN AMERICA.—The fact that *five* explosions of locomotive engines have occurred within one year's time upon the railroads of this country, a majority of which have been attended with most fatal consequences, should arouse the attention of the managers of railroad companies, and lead to the adoption of efficient measures to guard against such disasters. The first point, says the *American Railroad Journal*, to examine into, is as to the character and qualifications of the men who have charge of engines. These men should be well educated in their calling, and kept constantly informed upon all questions affecting their business. The engine driver should be the best informed mechanic on the road. A large portion of the repairs on some roads arise from the want of proper skill and judgment on the part of the engine drivers. There is as much difference in the wear of an engine as there is in the wear of a horse. Those companies that furnish their engine-drivers with suitable books and other means of information are amply repaid in the greater skill and more faithful performance of duty in those thus supplied with the means of knowledge. Every company could easily arrange this matter, and at once commence a satisfactory system of training, among the various persons in their employ. Either require every man who works upon, or takes charge of a locomotive, to furnish himself with the most valuable publication to be had touching upon the duties of his trade, or furnish the same to him at the expense of the company. One or the other of these things should be done. There is no danger but what such works would be read and studied. If not, then certainly the man who has so little love for his business or profession is unfit to take charge of a locomotive. Every day brings some valuable hints to the inquiring mind—suggesting remedies for existing defects, or pointing out new and more approved methods to accomplish certain results. These results are constantly appearing in various forms in the journals of the day. By close attention to these suggestions the faithful mechanic every day becomes more useful to his employer, is imbued with a higher moral, and becomes happier in the consciousness of his own advancement.—*Miners' Journal.*

THE BRIDGE OVER THE RHINE AT COLOGNE.—The following letter, signed "H. C." (Cambridge) has been addressed to the *Times*:—"I have studied diligently for several years since I took a mathematical degree at this University subjects analogous to those which Mr. Fairbairn discusses in his recently published letter respecting the bridge over the Rhine at Cologne. I think it would be useful for the public to understand that the judgment which Mr. Fairbairn has formed, and so positively announces, as to the superiority of tubular bridges, is not unanimously concurred in by those who have carefully considered the question. The *Times* is not the record of mathematical discussions. I, therefore content myself with indicating briefly the heads of the arguments of those who demur to Mr. Fairbairn's opinion.—1. It is mathematically demonstrable that the same quantity of metal disposed in the form of a tube, and a tension bridge, insures a great preponderence of strength to the latter kind of structure. I think I may venture to assume that Mr. Fairbairn himself will admit the beam to be the form of structure weakest of all kinds of iron bridges for a given quantity of metal. The iron arch, and the iron tension bridge, are *ceteris paribus*, stronger in a degree, depending on the rise of the former and the deflection of the latter.—2. Enormous expense is involved in raising a tubular bridge, which is not required for other structures.—3. There is not yet sufficient experience as to the permanence of the strength of tubular bridges. There is a well-grounded apprehension that constant vibration may give to the wrought iron a crystalline texture, and so almost entirely destroy its strength.—4. In the report of the *Iron Commission*, just published, and containing the investigations of men of the profoundest mathematical attainments—men whose opinions are of certainly as great weight as that of Mr. Fairbairn—it is stated that the commissioners 'are unable to express any opinion' upon tubular bridges, because 'no experience has yet been acquired of their powers to resist the various actions of sudden changes of temperature, vibrations, and other causes of deterioration.'—5. Mr. Hodgkinson, who was Mr. Fairbairn's own colleague in the experimental inquiries respecting tubular bridges, declines expressing an opinion as to their general superiority over other iron structures. The enormous expense to which the shareholders of the Chester and Holyhead Railway have been subjected on account of these tubular bridges, causes many of them to regard those structures as magnificent mistakes. It is not yet certain that they have not been paying most severely to gratify the scientific enthusiasm of the projectors of a scheme, which, whatever other merits it may possess, has not yet stood that test of long experience, which can alone justify its universal adoption."

RUPTURE OF A GIRDER BRIDGE AT GAINSBOROUGH.—On Tuesday morning, an accident of a serious nature occurred on the Manchester, Sheffield, and Lincolnshire Railway, at Gainsborough. An engine, named the *Sisyphus*, was shunting at the goods station, and in passing over the bridge on the Spital-road, the girders of the bridge snapped in the middle, and the engine fell on to the road, the hinder part remaining coupled to the tender, which kept on the line. The driver and stoker jumped off, and escaped unhurt. The down train had passed over a quarter of an hour before. The traffic was continued on the down line without interruption; but, it being market day, the farmers and others experienced great inconvenience, as they were obliged to go round by Morton. Whether the accident arose from some defect in the casting of the girders, or from the change in the relative conditions of the molecules, by the variation of temperature, remains to be ascertained.—*Sheffield Independent.*

THE GREAT HARBOUR OF REFUGE AT HOLYHEAD.—The want of a harbour of refuge on this exposed coast has long been felt; and when it is borne in mind that the greater portion of the vast fleets destined for Liverpool must pass near Holyhead, the national importance of such an undertaking cannot be exaggerated. Plans by Mr. Walker and Captain Beechy, R.N., were rejected, and one on a much more important scale by Mr. Rendel, who has carried out several great public works, was adopted by the Admiralty early in 1846. The estimate is 700,000*l.*, of which the Chester and Holyhead Railway Company have agreed to find 200,000*l.* The works were soon commenced, but have gone on rather slowly, and 10 or 15 years will probably elapse before they are completed. A visit to the scene of this great undertaking is one of the chief attractions of Holyhead. Nature has given Mr. Rendel valuable aid. There is a point called Penrhyn about 1¼ mile to the north-west of the present harbour, whence an indented rocky coast runs south-east. Considerably within this, at Soldier's Point, a gigantic breakwater is in progress, the stone for which is procured from a quarry in the mountain, 1 mile inland, to which a railway of prodigious gauge, for stone trucks, worked by locomotives, up a very steep incline, has been formed. The breakwater will terminate at Platter's Buoy, and a pier of 7500 feet, will be carried from Ynys Gybi, with its head resting on the Outer Platter. The arena enclosed within this half-moon will be 316 acres; the length across will be ¾ mile. There will be a jetty in the centre, and ample depth of water (none less than 6½ fathoms) at all states of the tide.—*Cliffe's Book of North Wales.*

THERE IS NO REMEDY EQUAL TO HOLLOWAY'S PILLS FOR THE CURE OF DROPSEY.—Mr. James Smith, of Oxford-street, Manchester, suffered for years from a dropsical complaint: his body and legs were swollen to a most alarming extent, and no hopes whatever were entertained of his recovery. He was for some time in the hospital, besides having taken every variety of medecine usually prescribed in such cases, yet all proved useless, and he was pronounced incurable. Holloway's pills were then resorted to, which soon had the effect of improving his health, and reducing the swelling, so that now he is perfectly cured of that direful complaint by taking these wonderful pills.—Sold by all druggists, and at Professor Holloway's establishment, 244, Strand, London.

THE DUISBURG IRON-WORKS COMPANY.

In the Court of Exchequer, on Tuesday, an action was brought by Mr. T. H. Bristow (formerly on officer in the 52d Regiment), against the Vicomte Charles de Secqueville, a French nobleman connected with the company projected last year to work certain iron mines in Prussia, known as the Duisburg Iron-Works, under a contract. It appeared that at the time when the plaintiff had taken the shares in question the company was in the course of formation, and it was alleged that he had accepted the said shares upon the consideration that if the company were not formed, the purchase-money was to be returned. The defendant put several pleas upon the record: but the material plea was that the company had been duly formed and constituted.

The plaintiff, it appeared in the course of the trial, had formerly been an officer in the 52d Regiment, and the defendant is the Count de Secqueville. During the spring of 1849, it seemed the plaintiff had been induced to invest the sum of 200*l.* in the purchase of 25 shares in this iron company, of which the defendant was the promoter. The plaintiff alleged that he had entered into an agreement with that gentleman prior to purchasing these shares, to the effect that if the latter should fail to perfect and complete the company he held himself liable for the repayment of the purchase-money—namely, 200*l.* This would seem to have been a private arrangement between the parties, and one of the specific terms said to have been agreed upon was that the money so invested should be returned within the space of six months, in the event of the company not being completely formed, or the project being abandoned. Upon these stipulations the plaintiff paid his money. The six months having expired without the completion of the formation of the company, and also without the promised repayment of the purchase money to the plaintiff, he applied to the defendant for the amount which he had in the manner stated advanced upon the shares. The reply which the plaintiff had received to this application was that he must come in under the Winding-up Act; and further, the defendant asserted that the company had been duly completed and constituted within the meaning and intent of the statutable law of Cologne.

Evidence, both oral and documentary, was then given in support of the case for the plaintiff.

Mr. SCOTLAND, on behalf of the defendant, said that this was a mere subterfuge on the part of the plaintiff, for the truth was that he, like others, had taken the shares in the usual way with the ordinary risk; but that, so soon as he had discovered that the concern was not likely to prove a profitable speculation, he had set up this assumed contract. The learned counsel then proposed to put in a document to prove that the company had been incorporated according to the law of Cologne.

Mr. M. CHAMBERS objected that the document was not admissable.

Mr. Baron ALDERSON said, that the document was not admissable, unless the learned counsel for the defendant were prepared to show that the alleged Act of Incorporation had been drawn up, signed, and sealed in pursuance of the statutable law of Cologne.

Mr. BACH was then called, when he stated that the document in question was in accordance with the customary form. He had studied the Code Napoleon at Leipsic.

Cross-examined.—His knowledge of the law he had gained by reading books, and not by actual practical experience.

Mr. Baron ALDERSON said, that this evidence was not sufficient. In his opinion the constitution of the company had not been made out. It would, therefore, be for the jury to say whether, in their opinion, the plaintiff had paid the money upon the conditions which he had alleged in the declaration. If so, then they ought to find a verdict for the plaintiff for the amount claimed; and if they so found, then he would give the learned counsel for the defendant leave to move, if he thought proper, upon the point of the assumed improper rejection of evidence to prove that the company had been legally constituted.

The jury at once returned a verdict for the plaintiff for the amount claimed.

ACCIDENTS.

Charge against a Coal Contractor for Culpable Negligence.—Robert Blair, a contractor and Robert Lumsden, manager of the Souterhouse Colliery, in Old Monkland, belonging to Mr. Wilson, of Dundyvan, were charged before the Court of Justiciary, at the Glasgow circuit, with culpable homicide, in neglecting to see that the ropes and tackle were safe, from the breaking of which one Robert Thomson was killed, and several other persons much injured. John Thomson, a collier, proved that on the 21st September last he, his three sons, and a grandson, having been working in the pit, got into the hutch to be drawn up; it was a double cage, they being in the lower compartment, with a load of coals above them, and when between 40 and 50 fathoms the rope broke, and the cage fell to the bottom, injuring the men more or less—Robert Thomson having died in six days. A witness named Bankier proved that Lumsden came every two days to see that everything went well; the two defendants were there three days before the accident; they examined, the rope, which was ragged, and had been condemned as unsafe, and a new one was lying at the top of the pit. After considerable evidence was gone into, the jury found R. Blair guilty of culpable neglect of duty, and Lumsden not guilty. The court sentenced Blair to six months' imprisonment.

Tavistock.—One of the engineers at the Bedford Iron Works, Richard Thomas, met with a most dreadful death while in the act of loading half of a bob for a 45-inch engine at St. Germans Quay, for the Treverthy Mine. The lifting-jack slipped while in the act of heaving it on the boiler waggon; it fell on one side, and all the weight, seven tons, fell on the poor fellow; he lived about three-quarters of an hour, when death put an end to his sufferings. He has left two orphan children, without father or friend.

Bal-cwidden Mine.—Whilst William Cosby was at work in the shaft, a piece of half-timber, about 3½ feet long, fell a distance of 10 fathoms, and struck the poor fellow on the head a most violent blow. Fortunately he had a hat on at the time, and hopes are entertained of his recovery.

Trimdon Grange Colliery.—W. C. Pround, aged 16, a putter, was crushed between a tub he was pushing along the rolley-way and the coal-wall, by reason of another tub, coming in the opposite direction, having been accidentally forced against the one of which deceased had charged. His head was very severely crushed, and his death ensued before he was got out of the pit.

Coal Pit Accident—Providential Escape of 150 Persons.—Last Saturday afternoon, between four and five o'clock, as the various individuals employed in the Boswell Pits, the property of Samuel Porter, Esq., of Ilkeston, were about ceasing their employment, an accident occurred by which the lives of 150 individuals were endangered. At the time stated, two bands of four each had been raised by the engine up the shaft of one of the pits, and had just got safely landed, when the piston-rod of the engine broke, and the rope that had just been loosed from the eight workmen suddenly ran down to the bottom of the pit. Immediate efforts were made by the superintendent to rescue the men in the pits, 150 in number; and it was not until three o'clock next morning (Sunday) that, by means of horses and fresh ropes all had been raised to *terra firma.*—*Notts Guardian.*

Darwen.—As T. Galloway was descending the shaft of a coal pit on Turton Moor, called Knowles' Colliery, he slipped from the ladder (fixed perpendicularly), and fell to the bottom, about 27 yards. When taken up, he was quite dead.

Manchester.—J. Williams was so severely injured by a premature blast, in a quarry near Dunsford Bridge, that he died the next day in the Manchester Infirmary. An iron rod was used in tamping, which struck fire with the rock, and ignited the powder.

Wolverhampton.—John Cadman was killed in a coal-pit at Shutt End by a fall of coal, which he had previously tried by striking the pike against it several times and thought it sounded safe. His son was working by the side of him at the time of the accident.

Bilston.—As James Holding, a furnace-filler at Mr. Jones's iron-works, Bilston Furnaces, was in the act of trying to jump off the waggon of one of the water lifts, whilst it was ascending, on to the other waggon which was descending, his foot slipped, and he fell into the waggon hole below, a distance of about eight yards. On being taken out of the waggon-hole, it was found that he had received a severe fracture of the skull, and was in a dying state. He expired on the road to his house.

Horseley-fields.—As Moses Price, aged 11 years, was attending the engine at Mr. Sparrow's works, he got one of his legs entangled in the machinery, and received such injuries as to occasion his death.

Llanelly.—A man and boy were seriously burnt at the Llandafen Colliery, in consequence of the damp taking fire. The boy was so injured that he soon after expired.

Ripley.—John Roper, aged 15 years, was killed by falling down the shaft of a coal-pit, 150 yards deep. It appeared that the deceased, accompanied by three others, were in the act of descending into the pit for the purpose of going to work, and owing to the corve in which he had placed himself with one of his companions not being placed properly on the chain, it caught the end of the bridge trees and was upset. Roper and his companions were late in getting to their work, being half an hour after their time, and being over anxious not to lose the turn in going down, was the cause of the upset of the corve which occasioned the death of the party.—*Derbyshire Reporter.*

Explosion at the East Cornwall Gunpowder Mills.—On Friday evening, about 9 o'clock, the inhabitants of the neighbourhood of Dulce, near Liskeard, were alarmed by the report of an explosion; it was heard so far west as Fowey, a distance of between 9 and 10 miles. On inquiry, the shock was found to have been occasioned by an explosion at the powder-mills at Herodsfoot, in the parish of Dulce, and which were worked for a Liskeard company. The drying-house, the corning-house, and the glossing-house of the mills had exploded, and been completely destroyed; so complete was the destruction in the case of the corning-house, that the whole of the walls were removed even to the foundation, one stone not being left upon another; and so powerful had been the explosion that the ground for several feet in depth beneath the floor had been displaced. Fragments of the buildings were carried, in various directions, to a distance of many yards, and for 20 or 30 yards around trees and bushes were torn up, and others had branches and portions broken off, and carried away by the shock, some being rent asunder. The glass and roof of the house in which the captain of the mills resided, at a distance of about 15 land yards, were much shattered, and some portion of the wall fell upon the captain as he lay in his bed and broke the small bone of his thigh. The most painful circumstance connected with this frightful disaster is that two of the workmen lost their lives, Joseph Pengelly, who has left a widow and three children, and Samuel Truscott, leaving a widow and seven children. It is supposed that one of the men had gone, as was customary, to the corning-house to see that all was safe, shortly before the explosion, and must have let a spark of fire fall from the lantern he carried, and that from this room exploding fire communicated to the others. It is remarkable that the storehouse of the mills, within 20 yards of the houses destroyed, and in which there were upwards of 30 tons of prepared powder, should have escaped. The mills are not materially injured; the loss must, however, have been very considerable.—An inquest was held, on Monday, the 29th April, on the bodies of the unfortunate sufferers, and a verdict of "accidental death" was returned.

THE GLASS TRADE.—The crown-glass trade, once so flourishing on the Tyne, is now perfectly paralysed. There are some 20 crown-glass houses on the Tyne, in which there were formerly manufactured from 15,000 to 20,000 "tables" weekly. At present there are only three houses in operation, and even this small number is far from being fully employed. The broad-glass manufacture, so successfully carried on by the late firm of Sir M. W. Ridley and Co., has ceased, and the whole of the large manufactory is entirely closed. The glass trade has fallen a victim to Peel's tariff.—*Durham Advertiser.*

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E. J. DENT, 82, Strand; 33, Cockspur-street; 34 Royal Exchange (clock tower area), Watch and Clock Maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1836, 1840, 1842. Silver lever watches, jewelled in four holes, 6 gs. each; in gold cases, from £8 to £10 extra. Gold horizontal watches, with gold dials, from 8 gs. to 12 gs. each

DENT'S PATENT DIPLIEDOSCOPE,

or Meridian Instrument, is now ready for delivery.—Pamphlets containing a description and directions for its use 1*s.* each, but to customers gratis.

New Patents.

LIST OF PATENTS GRANTED DURING THE PAST WEEK.

C. May, of Ipswich, engineer, and R. Leggett, of the same place, foreman of mechanics to Messrs. Ransom and May, of the same place, for improvements in machinery for threshing and grinding corn, for cutting straw, and other similar substances; also improvements in applying steam-power to give motion to such classes of machinery; and also improvements in machines for depositing seed.

G. Michiels, of London, gentleman, for improvements in treating coal, and in the manufacture of gas, and also in apparatus for burning gas. (Being a communication.)

E. Protheroe, of Austinfriars, London, merchant, for improvements in the manufacture of oxide of zinc, and in making paints from oxide of zinc. (Being a communication.)

W. G. Elliott, of Blisworth, Northampton, gentleman, for improvements in the manufacture of bricks, tiles, and pipes, and other articles from plastic materials. (Being a communication.)

DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

J. Cuthbert, and Co., Great Distaff-lane, London, apparatus for mulling liquids.

C. Starkey, Bloxwich, lock.

R. Fothergill, Aberdare Ironworks, Glamorgan, sleeper for tram-plates.

J. Peace, Sheffield, saw handle.

J. Chatwin, Birmingham, Albert gas burner.

Hall and Wilson, Manchester, gas retorts.

E. T. Loseby, Gerrard-street, Islington, portable crane shower-bath.

Shoolbred and Loveridge, Wolverhampton, hip-bath.

R. Barsby, and W. Wells, Dudley, day indicator.

S. Daniel, Birmingham, looking-glass movement.

F. P. Hewitt, Nottingham, compound elastic band, or strap, for articles of dress.

Hardman, Norton, and Co., Gresham-street, London, attacher for coats and other garments.—*Mechanics' Magazine.*

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Carr's Hartley 14 6—Holywell 14 6—Tanfield Moor 13 6—Tanfield Moor Butes 13—Walker Primrose 12 6—West Hartley 14 6—Wylam 14 3—Wall's-End Acorn Close 15 6—Brown 13 9—Bewicke and Co. 15—Brown's Gas 12 6—Gibson 14—Original Gibson 14 9—Riddell 14 3—Belmont 16—Haswell 17 6—Lumley 15 6—Whitwell 15—Heugh Hall 15 6—South Hartlepool 16 3—Whitworth 13 3—Maclean's Tees 13 6—Seymour Tees 14 9—Elsicar Steam 14 6—Hartley 13 9—Hunwick Coke 20 6—Sidney's Hartley 14 9.—Ships at market, 136; sold, 59.

WEDNESDAY.—Buddle's West Hartley 14 6—Carr's Hartley 14 6—Chester Main 14—East Adair's Main 12 6—Holywell 14 9—New Tanfield 13 6—Tanfield Moor 13—Tanfield Moor Bute's 13—Walker Primrose 12 6—West Hartley 14 6—Wylam 14 3—Wall's-End Brown 13 6—Gibson 13 6—Harton 14 6—Hilda 14 3—Riddell 14—Braddyll 16—Hetton 17 3—Haswell 17 9—Lambton 16 6—Russell's Hetton 16 6—Heugh Hall 15—Hartlepool 17 3—South Kelloe 15—West Hetton 14 9—Whitworth 13 3—Tees 17—Hartley 13 3 and 13 9—Howard's West Hartley Netherton 14 6—Sidney's Hartley 14 9.—Ships at market, 193; sold, 81.

FRIDAY.—Buddle's West Hartley 14 6—Carr's Hartley 14 6—Chester Main 14—Adair's Main 12 6—North Percy Hartley 14—New Tanfield 13 6—Walker's Primrose 12—West Hartley 14—Wall's-End Brown 13 3—Bewicke and Co. 14 6—Burraton Killingworth 14—Gosforth 14 3—Gibson 13 3—Hilda 13 9—Morrison 14 3—Northumberland 13 6—Biddell 13 9—Lambton Primrose 15 6—Bell 14 9—Braddyll 16—Hetton 16 6—Haswell 16 9—Russell's Hetton 16—Stewart's 16 3—Caradoc 15 6—Denison 14 3—Heugh Hall 14 9—Kelloe 16—Whitworth 13—Adelaide Tees 15 6—Cowndon Tees 14 6—Tees 16 6—Hartley 13 3—Sidney's Hartley 14 9—Wylam 14 3.—Ships, 106; sold, 70.

LIST OF PRIZES FOR SESSION 1850-51.

THE ROYAL SCOTTISH SOCIETY OF ARTS proposes to AWARD PRIZES, of different values (none to exceed Thirty Sovereigns), in Gold or Silver Medals, Silver Plate, or Money, for APPROVED COMMUNICATIONS primarily submitted to this Society, relative to Inventions, Discoveries, and Improvements in the MECHANICAL and CHEMICAL ARTS in general, and also to means by which the NATURAL PRODUCTIONS of the country may be made more available; and in particular to—

I.—Inventions, Discoveries, or Improvements in the Useful Arts, including the Mechanical and Chemical; and in the Mechanical Branch of the Fine Arts; such as, but not limited to, the following—viz.:

1. MECHANICAL ARTS.

1. Improvements in Sewerage—in Water Closets and Urinaries—in Economical Methods of introducing a sufficient Supply of Water into our smaller Towns—and other appliances for increasing the Sanitary Condition of Cities and Towns—Methods of Warming and Ventilating Public Edifices, Private Dwellings, &c.—of constructing Economical and Salubrious Dwellings for the Working Classes—of Filtering Water in large quantities—of Extinguishing Fires—of applying Glass to new and useful purposes, &c.

2. Inventions or Improvements in Preserving Timber and Metals in Marine Works—in Marine, Stationary, and Locomotive Engines—in Railways and Railway Plant—in Tools, Implements, and Apparatus for the various Trades—in the Manufacture of Metals, simple or alloyed—in Gilding and Lacquering Brass—in Cements and Mortars—in Screw-cutting, in Stereotyping and Type Founding—in the Composition of Printers' Rollers—in Shipbuilding—in the Machinery for the Working of Collieries and other Mines, &c.

2. CHEMICAL ARTS.

Improvements in Dyes and Paints—in Fine Glass for Optical Purposes—in rendering Glass hard and difficult of fusion for Chemical Purposes—in Writing Inks—in the Manufacture of Thin Sheets of Gutta Percha, of equal strength in all directions—in Oil for fine Machinery, Clocks, and Watches, &c.

3. RELATIVE TO THE FINE ARTS.

Improvements in Patterns for Articles in Porcelain, Common Clay, or Metal—in Glass Staining—in Engraving on Stone—in Daguerreotype, Talbotype, or other Photographic Processes—in Electrotype Processes—in Die-sinking—in methods of Illustrating Books to be printed with the Letterpress—in Ornamental Metallic Casting—in Designs and adaptation of new Materials for Sepulchral Monuments, &c.

II.—Experiments applicable to the Useful Arts.

III.—Notices of Processes in the Useful Arts practised in this or other Countries, but not generally known. (Subjects of *foreign* patents are not excluded.)

IV.—Practical Details of Public or other Undertakings of National Importance, already executed, but not previously published, or valuable suggestions for originating such undertakings.

The Society also proposes to award the KEITH PRIZE, value Thirty sovereigns, for some important "Invention, Improvement, or Discovery, in the Useful Arts, which shall be primarily submitted to the Society," betwixt and 1st April, 1851.

GENERAL OBSERVATIONS.

Communications lodged in competition for prizes shall not have been patented in Great Britain or Ireland, nor have been previously published, or read before any other Society.

The descriptions of the various inventions, &c., must be *full* and *distinct*; be written on *foolscap* paper, leaving margins at least one inch broad, on *both the outer and inner sides of the writing*, so as to allow of their being bound up in volumes; and, when necessary, be accompanied by *specimens, drawings, or models.* All drawings to be on *imperial* drawing paper, unless a larger sheet be requisite. The drawings to be in *bold* lines, not less than an eighth of an inch thick, or *strongly coloured*, so as to be easily seen at about the distance of thirty feet when hung up in the hall of meeting, and the letters, or figures of reference, to be at least 1½ inches long.

The society to be at liberty to publish in their Transactions copies or abstracts of all papers submitted to them. All models, drawings, &c., for which prizes shall be given, to be held to be the property of the society; the value of the model, &c., being taken into account in fixing the amount of the prize.

Communications, models, &c., are to be addressed to JAMES TOD, Esq., the secretary, 55, Great King-street, Edinburgh, postage or carriage paid: and they are expected to be lodged *on or before 1st October*, 1850, in order to ensure their being read and reported on during the session, the ordinary meetings of which end in April, 1851; but *those which cannot be lodged earlier*, will be received up to 1st March, 1851; those lodged after that date may not be read or reported on till the following session.

Edinburgh, April 8, 1850. By order of the Society, JAMES TOD, Sec.

*** Copies of this list of prizes may be had from the secretary.

IMPROVED WIRE ROPE.—The UNDERSIGNED, in tendering their best thanks for the liberal support they have hitherto received, respectfully solicit attention to the vast IMPROVEMENTS which new machinery and attention has enabled them to effect in the MANUFACTURE of ANDREW SMITH'S PATENT WIRE ROPE, more particularly his FLAT ROPE, which they can now produce of a description far superior to any previously offered to the public.

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The above is by far the strongest Cast-Iron made, and is now being extensively used where strong castings are required

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BY HER MAJESTY'S ROYAL LETTERS PATENT.

MASTERS & CO., ORIGINAL INVENTORS and SOLE PATENTEES of the following SCIENTIFIC and USEFUL INVENTIONS, beg to call the attention of the Nobility and Gentry to their latest discovery in the preparation of SODA WATER, &c. &c., by their

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By the aid of which Soda Water, and all aerated waters, can be made and fully charged with carbonic acid gas in a few minutes, and the flattest Beer or Wine can be made as brilliantly sparkling as Champagne in an equally short time, and the expense mere nothing.—Price of machine, 30*s.* and upwards, which needs only be seen to be appreciated. Adapted for shippers to every climate. Also,

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London: Printed by RICHARD MIDDLETON, and published by HENRY ENGLISH (the proprietors), at their offices, No. 26, FLEET-STREET, where all communications are requested to be addressed. [*May* 4, 1850.